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ABSTRACT

Developed primarily as a beginning course of study for the practical nurse, this first of a two-part course can also be used to instruct nursing assistants and nursing students at other levels of practice. This curriculum guide is divided into the following three major areas of instruction: personal vocational relationships; basic nursing principles and skills; and studies in life sciences and health which include anatomy, physiology, microbiology, and nutrition. Each area consists of several units of instruction making a total of fifty-one units in the course. Each instructional unit contains both terminal and specific behavioral objectives, suggested activities for teacher and students, information sheets, assignment sheets and/or job sheets, visual aids, tests, test answers, and a reference list. Units are planned for more than one lesson or class period of instruction. (BM)

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NURSING I

A Course of Study

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FOREWORD

This publication provides a course of study requisite for the beginning practice of nursing. It initiates an articulated curriculum designed to facilitate career mobility in the health occupations and includes Personal Vocational Relationships, Basic Nursing Principles and Skills, and Life Sciences and Health. While primarily developed to serve the first area of practical nursing instruction, the content and flexible arrangement of materials are equally appropriate to the instruction of the nursing assistant or nursing students at other levels of practice.

The purpose of the curriculum is to enhance the quality of health occupations education programs by providing instructors with assistance in the organization and presentation of materials to maximize learning experiences. It is hoped that this provision of commonalities and continuities in nursing education will also be of value to the student through career development opportunities and credit for previous knowledge and experience by advanced standing in ongoing programs.

The dedicated committee members responsible for the development of this course of study sincerely believe that, ultimately, society will benefit through expanded health services and better patient care.

Patricia Jamison, State Supervisor
Health Occupations Education

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PREFACE

Nursing and other health occupations have been undergoing great change since 1965 when major health legislation was begun at the federal and state levels of government. In order to meet the growing health needs of our communities, curriculum must be constantly revised and rewritten.

Much effort has been made by the Health Occupations Curriculum Committee to make this publication basic, readable, and useable. This publication does not cover every area of health occupations education, but it is intended to provide the basics of nursing as well as the opportunity for the student to continue education in his chosen field.

These materials are constructed to allow the instructor to adapt the material as desired. It is the responsibility of the instructor to supplement this publication as necessary to meet the needs of the students, the institution, and the community.

After using this curriculum publication, it is hoped that each teacher will realize the effectiveness of this approach to teaching. Because all resource material focuses toward a measurable outcome, the student should be able to achieve a higher level of performance.

Helen Rogers
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ACKNOWLEDGMENTS

Appreciation is extended to those individuals who contributed their time and talents to the development of this curriculum.

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USE OF THIS PUBLICATION

Instructional Units

Nursing I curriculum includes three areas. Each area consists of several units of instruction. Each instructional unit includes behavioral objectives, suggested activities for teacher and students, information sheets, assignment sheets and/or job sheets, visual aids, tests, and answers to the test. Units are planned for more than one lesson or class period of instruction. The individual instructor should adapt this material to the demands of her local community.

Careful study of each instructional unit by the teacher will help her determine:

A. The amount of material that can be covered in each class period.
B. The skills which must be demonstrated.
    1. Supplies needed
    2. Equipment needed
    3. Amount of practice needed
    4. Amount of class time needed for demonstrations
C. Supplementary materials such as pamphlets and filmstrips that must be ordered.
D. Resource people that must be contacted.

Objectives

Each unit of instruction is based on behavioral objectives. These objectives state the goals of the course thus providing a sense of direction and accomplishment for the student.

Behavioral objectives are stated in two forms: Terminal Objectives stating the subject matter to be covered in a unit of instruction; Specific Objectives stating the student performance necessary to reach the terminal objective.

Since the objectives of the unit provide direction for the teaching-learning process, it is important for the teacher and students to have a common understanding of the intent of the objectives. A limited number of performance terms have been used in the objectives for this curriculum to assist in promoting the effectiveness of the communication among all individuals using the materials.

Following is a list of performance terms and their synonyms which were used in this material:

Name	Identify	Describe
Label	Select	Define
List in writing	Mark	Discuss in writing
List orally	Point out	Discuss orally
Letter	Pick out	Interpret
Record	Choose	Tell how
Repeat	Locate	Tell what
Give		Explain

Order
Arrange
Sequence
List in order
Classify
Divide
Isolate
Sort

Distinguish
Discriminate

Construct
Draw
Make
Build
Design
Formulate
Reproduce
Transcribe
Reduce
Increase
Figure
Cost

Demonstrate
Show your work
Show procedure
Perform an experiment
Perform the steps
Operate
Remove
Replace
Turn off/on
(Dis) assemble
(Dis) connect

Reading of the objectives by the student should be followed by a class discussion to answer any questions concerning performance requirements for each instructional unit.

Teachers should feel free to add objectives which will fit the material to the needs of his students and community. When a teacher adds objectives, he should remember to supply the needed information, assignment and/or job sheets, and criterion tests.

Suggested Activities

Each unit of instruction has a Suggested Activities sheet outlining steps to follow in accomplishing specific objectives. The activities are listed according to whether they are the responsibility of the instructor or the student.

Instructor: Duties of the instructor will vary according to the particular unit; however, for best use of the material they should include the following: provide students with objective sheet, information sheet, assignment sheets and/or job sheets; preview filmstrips, make transparencies, and arrange for resource materials and people; discuss terminal and specific objectives and information sheets; give test. Teachers are encouraged to use any additional instructional activities and teaching methods to aid students in accomplishing the objectives.

Students: Student activities are listed which will help the student to achieve the objectives for the unit.

Information Sheets

Information sheets provide content essential for meeting the cognitive (knowledge) objectives of the unit. The teacher will find that information sheets serve as an excellent guide for presenting the background knowledges necessary to develop the skills specified in the terminal objective.

Students should read the information sheets before the information is discussed in class. Students may take additional notes on the information sheets.

Transparency Masters

Transparency masters provide information in a special way. The students may see as well as hear the material being presented, thus reinforcing the learning process. Transparencies may present new information or they may reinforce information presented in the information sheets. They are particularly effective for such activities as identifying and locating the parts of the human body.

Transparencies should be made and placed in the notebook where they will be immediately available for use. Transparencies direct the class's attention to the topic of discussion. They should be left on the screen only when topics shown are under discussion. (NOTE: Stand away from the overhead projector when discussing transparency material. The noise of the projector may cause the teacher to speak too loudly.)

Job Sheets

Job sheets are an important segment of each unit. The instructor should be able to and in most situations should demonstrate the skills outlined in the job sheets. Procedures outlined in the job sheets give direction to the skill being taught and allow both student and teacher to check student progress toward the accomplishment of the skill. Job sheets provide a ready outline for a student to follow if he has missed a demonstration. Job sheets also furnish potential employers with a picture of the skills being taught and the performances he might reasonably expect from a person who has had this training.

Assignment Sheets

Assignment sheets give direction to study and furnish practice for paper and pencil activities to develop the knowledges which are necessary prerequisites to skill development. These may be given to the student for completion in class or used for homework assignments. Answer sheets are provided which may be used by the student and/or teacher for checking student progress.

Test and Evaluation

Paper-pencil and performance tests have been constructed to measure student achievement of each objective listed in the unit of instruction. Individual test items may be pulled out and used as a short test to determine student achievement of a particular objective. This kind of testing may be used as a daily quiz and will help the teacher spot difficulties being encountered by students in their efforts to accomplish the terminal objective. Test items for objectives added by the teacher should be constructed and added to the test.

Test Answers

Test answers are provided for each unit. These may be used by the teacher and/or student for checking student achievement of the objectives.

ORIENTATION TO PRACTICAL NURSING
UNIT I

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to state the general objectives of the Practical Nurse Program. The student should be able to name steps in learning, identify desirable study habits, and demonstrate a favorable attitude toward the nursing program. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with Orientation to Practical Nursing to the correct definition.
2. State the general objectives of the Practical Nurse Program.
3. Name four techniques of classroom learning.
4. Select from a list nine desirable study habits.
5. Arrange in order the steps to follow when solving a problem.
6. List three purposes of examinations.
7. List four types of examinations.
8. List four preparation suggestions for examinations.
9. List five suggestions for taking an examination.
10. Name three methods used by the instructor to evaluate student attitude and behavior throughout the program.

ORIENTATION TO PRACTICAL NURSING
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information and assignment sheets.

   E. Give test.

   (NOTE: In addition, instructor should thoroughly explain the policies of the individual school or hospital and any other pertinent information usually given to the students concerning orientation.)

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussions.

   D. Complete assignment sheet.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Assignment Sheet #1--Problem Solving Situation

   D. Answers to assignment sheet

   E. Test

   F. Answers to test

II. References:

A. Bush, Christine H. *Personal and Vocational Relationships for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1966.

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ORIENTATION TO PRACTICAL NURSING
UNIT I

INFORMATION SHEET

I. Terms and definitions

- A. Learning--A slow accumulation of fact upon fact which clusters together and becomes knowledge
- B. Nurse--A dedicated person who devotes her time to the maintenance of optimum health and care of the sick and injured of the community
- C. Nursing--Care of the sick, prevention of illness, and promotion of health
- D. Orientation--Becoming acquainted with the existing situation and environment
- E. Registered nurse--One who assumes the responsibility for the care of a patient under the direction of a licensed physician or a dentist
- F. Practical nurse--One who works under the supervision of a registered nurse, a licensed physician, or a dentist
- G. Clinical--Pertaining to instruction at the bedside or actual treatment of the patient as distinguished from theoretical or experimental instruction

II. Objectives of the Practical Nurse Program

- A. To prepare the student for the responsibilities of a job as a Licensed Practical Nurse
- B. To give the student a basic foundation for continuing his/her education

III. Techniques of classroom learning

- A. Cultivate a favorable attitude
- B. Build a new vocabulary
- C. Listen attentively
- D. Take notes
- E. Read assignments before class
- F. Ask questions if you do not understand

IV. Study habits

- A. Prepare a time schedule providing a specific time for study
- B. Begin studying as soon as the course begins

INFORMATION SHEET

- C. Choose suitable surroundings
- D. Study as soon as possible after class
- E. Review classroom notes
- F. Take notes when reading assignments and references

  (NOTE: If you prefer, mark important passages in your books.)
- G. List unfamiliar words and look up their definitions
- H. Use library for references and additional materials
- I. Discuss with classmates what you have read

V. Problem solving

- A. Define the problem
- B. Gather facts
- C. Analyze the data collected
- D. Take needed action
- E. Evaluate action

VI. Purposes of examinations

- A. To assess knowledge or progress
- B. To measure performance
- C. To reinforce learning
- D. To evaluate teaching methods

VII. Types of examinations

- A. Essay
- B. Completion
- C. True, false
- D. Multiple choice
- E. Matching
- F. Clinical performance evaluation

INFORMATION SHEET

VIII. Preparation suggestions for examinations

- A. Study regularly
- B. Follow a well-organized plan of review
- C. Write legible, well-organized notes
- D. Memorize needed facts, formulas, principles
- E. Relax

IX. Taking the examination

- A. Follow directions carefully
- B. Note number of questions, credit value of questions and time allowed
- C. Assign each question an appropriate per cent of total time
- D. Answer easier questions first; then go back and answer more difficult ones
- E. Check to see that all questions have been answered
- F. Read question thoroughly before writing any answer
- G. On answer sheets, check carefully to see that the number of the question matches the number of the answer

X. Methods for evaluating student attitude and behavior

- A. Participation by student in classroom
- B. Response of student to instruction and criticism
- C. Behavior of student in classroom and clinical setting

ORIENTATION TO PRACTICAL NURSING
UNIT I

ASSIGNMENT SHEET #1--PROBLEM SOLVING SITUATION

You would like to become a Health Care Practitioner. Using the problem-solving technique you have just learned, show your course of action in entering Practical Nurse school.

ORIENTATION TO PRACTICAL NURSING
UNIT I

ANSWERS TO ASSIGNMENT SHEET

(NOTE: The following is an example of solving the problem in Assignment Sheet #1.)

1. Define problem--Want to become a worker in Health Occupations
2. Gather facts--List:

Types of health workers	Length of education	Approximate salary
Physicians	4 yrs college--4 yrs med school	$25,000-$40,000
Physicians assistant	2 yrs college or equivalent plus clinical experience given to former members of armed services' medical corps and registered nurses	$8,000-$13,000
Nurse, RN	3 or 4 years nursing school and/or college	$7,000-$10,000
Nurse, LPN	1 year nursing school	$4,800-$6,000
Nurse Practitioner	Master's in Nursing Degree	$8,000-$13,000
Nurse Assistant or Nurses' Aide	Ten weeks training or on-the-job training	$3,500-$4,000
Dental hygienist	2 or 4 years college	$7,000-$10,000
Dental technician	2 to 4 years college	$4,500-$8,000
Dieticians	4 years college + graduate work	$8,000-$18,000
Medical technologist	4 years college	$7,200-$12,000
Occupational therapist	4 years college + clinical practice	$8,000-$15,000
Laboratory assistants	On-the-job training-usually one year	$5,200-$6,500

Source of information: *Profiles of Health Careers.* Oklahoma Council for Health Careers, 1973.

3. Analyze data
    a. Consider salaries and the length of time required to reach goal
    b. Consider availability of educational opportunities and personal responsibilities
4. Take action--What are you doing to reach your goal?
5. Evaluation--Will come later to see if you reach your goal

ORIENTATION TO PRACTICAL NURSING
UNIT I

TEST

1. Match the terms on the right with the correct definition.

_____a. A slow accumulation of fact upon fact which clusters together and becomes knowledge

_____b. Care of the sick, prevention of illness, and promotion of health

_____c. One who assumes the responsibility for the care of a patient under the direction of a licensed physician or a dentist

_____d. A dedicated person who devotes her time to the maintenance of optimum health and care of the sick and injured of the community

_____e. Becoming acquainted with the existing situation and environment

_____f. One who works under the supervision of a registered nurse, a licensed physician, or a dentist

_____g. Pertaining to instruction at the bedside or actual treatment of the patient as distinguished from theoretical or experimental instruction

1. Clinical
2. Practical nurse
3. Learning
4. Orientation
5. Nursing
6. Registered nurse
7. Nurse

2. State the general objectives of the Practical Nurse Program.

a.

b.

3. Name four techniques of classroom learning.

a.

b.

c.

d.

4. Place a "D" in front of each desirable study habit in the list below.

______a. Wait until class time to study

______b. Review classroom notes

______c. List unfamiliar words and look up their definitions

______d. Study as soon as possible after class

______e. Study six hours the night before a test

______f. Prepare a time schedule providing a specific time for study

______g. Take notes when reading assignments and references

______h. Begin studying as soon as the course begins

______i. Omit recreation to study

______j. Choose suitable surroundings

______k. Discuss with classmates what you have read

______l. Ignore new words

______m. Use library for references and additional materials

5. Arrange in order the steps to follow when solving a problem by placing a "1" before the first step, a "2" before the second step, and so on.

______a. Analyze the data collected

______b. Gather the facts

______c. Take needed action

______d. Define the problem

______e. Evaluate action

6. List three purposes of examinations.

a.

b.

c.

7. List four types of examinations.

a.

b.

c.

d.

8. List four preparation suggestions for examinations.

   a.

   b.

   c.

   d.

9. List five suggestions for taking an examination.

   a.

   b.

   c.

   d.

   e.

10. Name three methods used by the instructor to evaluate student attitude and behavior throughout the program.

   a.

   b.

   c.

ORIENTATION TO PRACTICAL NURSING
UNIT I

ANSWERS TO TEST

1. a. 3
   b. 5
   c. 6
   d. 7
   e. 4
   f. 2
   g. 1

2. a. To prepare the student for the responsibilities of a job as a Licensed Practical Nurse.
   b. To give the student a basic foundation for continuing his/her education.

3. a. Cultivate a favorable attitude
   b. Build a new vocabulary
   c. Listen attentively
   d. Take notes
   e. Read assignments before class
   f. Ask questions if you do not understand

4. b
   c
   d
   f
   g
   h
   j
   k
   m

5. a. 3
   b. 2
   c. 4
   d. 1
   e. 5
6. Any three of the following
   a. To assess knowledge or progress
   b. To measure performance
   c. To reinforce learning
   d. To evaluate teaching methods
7. Any four of the following
   a. Essay
   b. Completion
   c. True, false
   d. Multiple choice
   e. Matching
   f. Clinical performance evaluation
8. Any four of the following
   a. Study regularly
   b. Follow a well-organized plan of review
   c. Write legible, well-organized notes
   d. Memorize needed facts, formulas, principles
   e. Relax
9. Any five of the following
   a. Follow directions carefully
   b. Note number of questions, credit value of questions and time allowed
   c. Assign each question an appropriate percent of total time

d. Answer easier questions first; then go back and answer more difficult ones

e. Check to see that all questions have been answered

f. Read question thoroughly before writing any answer

g. On answer sheets, check carefully to see that the number of the question matches the number of the answer

10. a. Participation by student in classroom

b. Response of student to instruction and criticism

c. Behavior of student in classroom and clinical setting

INTRODUCTION TO PERSONAL VOCATIONAL RELATIONSHIPS
UNIT II

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list factors which influence health and discuss the maintenance of physical and mental health. The student will be able to list personal qualifications and explain rules of conduct. This knowledge will be evidenced by scoring eighty-five percent on the unit test and by demonstration throughout the program.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with personal vocational relationships to the correct definition.
2. List six of the eight factors which affect health.
3. Write a short paragraph about each of the five factors in maintaining physical health.
4. Discuss briefly seven factors involved in maintaining mental health.
5. Name five of six personal qualifications.
6. State an explanation or example of each of the nine rules of on-duty conduct.

INTRODUCTION TO PERSONAL VOCATIONAL RELATIONSHIPS
UNIT II

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objective sheet.
- B. Provide students with information and assignment sheets.
- C. Discuss terminal and specific objectives.
- D. Discuss information and assignment sheets.
- E. Assist with assignment sheets as necessary.
- F. Give test.

II. Student:

- A. Read objectives.
- B. Study information sheet.
- C. Participate in discussions.
- D. Complete assignment sheets.
- E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Assignment sheets
    1. Assignment Sheet #1--Nutritional Assessment
    2. Assignment Sheet #2--Self-Assessment of Personal Behavior
    3. Assignment Sheet #3--Discussion of Influences on Personality and Mental Health
- D. Test
- E. Answers to test

II. References:

(NOTE: Some of the textbooks included in this list are no longer being printed. They were included, however, because they may be available in some nursing libraries.)

A. Becker, Betty G. and Sister Ruth Ann Hassler. *Vocational and Personal Adjustments in Practical Nursing.* St. Louis, Missouri: The C.V. Mosby Company, 1970.

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III. Additional Materials:

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INTRODUCTION TO PERSONAL VOCATIONAL RELATIONSHIPS
UNIT II

INFORMATION SHEET

I. Terms and definitions

A. Heredity--Transmission of physical and mental characteristics from parent to offspring

B. Congenital--Present at and existing from the time of birth

C. Environment--Surroundings or influence

D. Health--A complete state of mental, physical, and social well-being and not the mere absence of disease or infirmity

E. Nutrition--Process of using food for growth and development

F. Deficiency--A shortage or a lack

G. Hygiene--Science of health and its maintenance

H. Menses--Periodic discharge through the vagina of blood and tissues from a non-pregnant uterus

I. Uterus--A hollow, pear shaped female organ of reproduction; the womb

J. Elimination--Bodily discharge of waste products

K. Immunization--Prevention of a disease by inoculation or vaccination

(NOTE: The terms immunization, inoculation, and vaccination are used interchangeably.)

L. Recreation--Diversion; refreshment of body and mind

M. Body mechanics--Using the body efficiently, safely, and without undue fatigue

N. Personality--Sum total of a person's behavior, characteristics, attitudes, and habits

O. Poise--Ability to be composed and self-controlled in pleasant or unpleasant situations

P. Attitude--A pattern of mental views established by prior experience

Q. Posture--Arrangement of the body parts in relation to each other

R. Tension--Stress; accumulation of pressures

S. Ethnic--Pertaining to a group of people classed according to common race, creed, or nationality

INFORMATION SHEET

T. Prejudice--Preconceived judgment or opinion

U. Confidant--One to whom information can be entrusted

V. Role--Function assumed by an individual

W. Charm--Elusive quality that makes one attractive to others

X. Self-esteem--Self-respect; how one regards himself

Y. Self-confidence--Confidence in one's self and abilities

Z. Egotism--An exaggerated sense of self-importance

II. Factors which affect health

A. Heredity or congenital disorders

(NOTE: Physical or mental disabilities may be inherited or occur during pregnancy. Tendency toward some diseases or conditions such as diabetes and others may be inherited.)

B. Environment

(NOTE: Living or working conditions may influence a condition or illness.)

C. Infancy and early childhood

(NOTE: Nutrition, health care, and environment are extremely important at this time.)

D. Nutrition

(NOTE: Not enough food, lack of certain essentials, over-eating, or too much of some essentials influence nutrition.)

E. Injuries or accidents

(NOTE: Acquired disabilities may cause temporary or permanent adjustments.)

F. Increased mobility

(NOTE. Disease and health problems may be quickly transmitted from one area to another.)

G. Medical attention

(NOTE: This may be due to health care not being available in some areas or refusal to seek or accept health care.)

H. Personal habits

(NOTE: Examples are misuse of alcohol, drugs, or tobacco or disregarding health fundamentals.)

INFORMATION SHEET

III. Maintaining physical health

  A. Personal care

    1. Bathing--Close personal contact makes a daily bath and use of deodorants desirable

    2. Dental care

      a. Brush teeth after eating

      b. Have regular dental check-up

    3. Clothing and uniform--Wear clean clothing and undergarments each day

    4. Hands and nails

      a. Hands must be clean and skin smooth

      b. Nails should be short and well-kept

    5. Hair

      a. Clean

      b. Becomingly arranged and off the collar

    6. Foot care

      a. Clean, well-fitted hose

      b. Comfortable, suitable shoes

    7. Make-up

      a. Use sparingly

      b. Apply carefully

    8. Elimination--Regulate by correct eating habits and exercise

    9. Immunization

      a. Protects against disease

      b. Prevents spread of disease

    10. Regular physical examination--Self-examination of breasts

INFORMATION SHEET

B. Nutrition--Basic four food groups and daily requirements

1. Bread and cereal--Four or more servings

2. Meat, poultry, fish, eggs, and legumes--Two or more servings

3. Fruits and vegetables--Four or more servings including one deep yellow or leafy green and one citrus

4. Milk, cheese, ice cream--Two or more servings

C. Rest and recreation

1. Adequate amount of sleep

(NOTE: Because of the demands of your schedule, you may need more sleep than usual.)

2. Participation in a sport, hobby, or other pastime regularly

D. Physical activity

1. Correct posture--Standing, walking, or sitting erect

2. Adequate exercise

E. Body mechanics

1. Base of support is related to body balance

(NOTE: Feet slightly apart or one slightly ahead of the other provides better balance.)

2. Work close to an object to prevent unnecessary reaching and strain on the muscles

3. Slide, roll, push, or pull an object rather than lifting it

4. When lifting is necessary, use longest and strongest muscles of legs and arms to provide power

IV. Factors involved in maintaining mental health

A. Personality

1. Determined by heredity and environment

2. Can be changed by conscious action over a period of time

INFORMATION SHEET

B. Habits
  1. Change and modify throughout life
  2. Can break an undesirable habit by substituting a more desirable one

C. Charm
  1. Can be developed
  2. Closely related to poise

D. Poise
  1. May take much time and effort to develop
  2. Lends assurance and confidence

E. Attitudes
  1. Positive attitudes help one to see that life is something good and challenging
  2. Negative attitudes stifle growth and achievement

F. Tension
  1. Can be positive or negative
  2. Coping with tension
    a. Discuss problems with someone who can be trusted
    b. If no confidant is available, write a detailed letter and then destroy it
    c. Work off tension with physical activity such as cleaning a closet or taking a walk

G. Cultures
  1. Ethnic influences
    a. Food preference
    b. Reaction to pain or illness
    c. Religious beliefs and practices
    d. Language

INFORMATION SHEET

2. Prejudices
    a. Acquired from others
    b. Result from ignorance, fear, insecurity, inferiority
    c. Can be changed
3. Hang-ups
    a. Modern cliche
    b. Motivating force either positive or negative
    c. Biased opinion which influences attitude, behavior, judgement, decision making, and action
    d. Judgement based on one's own life experiences (a fixed opinion)

V. Personal qualifications

A. Concern for self and others

B. Cheerfulness

(NOTE: Includes being optimistic, pleasant, and good-humored.)

C. Patience

(NOTE: Includes being thoughtful and understanding.)

D. Loyalty

(NOTE: To profession, institution, and co-workers.)

E. Dependability

(NOTE: Be on duty when expected and fulfill your assignments.)

F. Perseverance

(NOTE: Continue your training even when the task becomes difficult. Do the best work possible at all times.)

G. Tact

(NOTE: Avoid thoughtless or careless remarks and treat others with respect.)

VI. Rules of on-duty conduct

A. Be punctual

1. Report on and off duty at designated time

INFORMATION SHEET

2. Return from meals and breaks promptly

3. Notify proper person of tardiness or absence in advance

B. Wear the uniform proudly and correctly

(NOTE: Rules for wearing the uniform:

Do:

Wear the uniform and the cap in accordance with your school's or employer's personnel policies.

Have your uniform spotlessly clean, ironed, properly buttoned, and of the proper length.

Wear proper shoes that are polished and in good repair with supportive and straight heels.

Wear full-length hose that are clean and mended if necessary.

Have a watch with a second hand, a pen, scissors, and other articles that you need constantly in the performance of your duties.

Have your cap stiffly starched, without wrinkles, and make sure that your "band" or emblem is affixed properly without using visible clips or bobby pins.

Wear your uniform with pride and dignity. Set an example to others by being immaculately groomed and dressed for what you are--a nurse.

Do not

Wear your cap in public places or on the street (unless on official functions approved by your school or employer). Carry it in a plastic bag to protect it.

Wear extreme hair styles.

Wear excessive amounts of perfume, make-up, jewelry, or fingernail polish; choose these with care to compliment your uniform and general appearance.

Smoke so that the tobacco odor lingers on and becomes a part of the uniform. Observe non-smoking areas.

Chew gum or drink alcoholic beverages while on duty.

Bring disgrace on the uniform or the vocation of which you are a part.)

C. Be cooperative

1. Do assigned duties correctly

2. Accept assignment changes

3. Work harmoniously with others

D. Be honest

1. To self by doing what you are properly prepared to do

INFORMATION SHEET

2. To patient by providing assistance as needed
3. To employer by using time, equipment, and supplies wisely

E. Observe rules of etiquette

1. Assist patient's families and visitors
2. Be helpful and courteous always
3. Help maintain a pleasing atmosphere

F. Avoid unethical conduct

1. Discuss patient care and problems in the proper place
2. Avoid "shop talk" in public places

G. Answer telephone professionally--Answer the phone by stating ward or unit and your name and title

Examples: "Fourth floor, Ms. Jones, LPN"
"Pediatrics, Mr. Brown, student nurse"

H. Do not leave your assigned area without permission

1. Report to charge nurse when going to meals or on breaks
2. Report off duty to charge nurse

I. Nurses should not expect or accept tips or personal gifts from patients

(NOTE: When such are offered, decline them courteously or ask your supervisor for assistance.)

INTRODUCTION TO PERSONAL VOCATIONAL RELATIONSHIPS
UNIT II

ASSIGNMENT SHEET #1--NUTRITIONAL ASSESSMENT

Since we are studying the four basic food groups and the number of servings suggested for each per day, write what you had to eat yesterday on the left side of the page. On the right side of the page, suggest foods you might add or omit to make your menu better balanced nutritionally.

Breakfast

Lunch

Supper or dinner

Snacks

INTRODUCTION TO PERSONAL VOCATIONAL RELATIONSHIPS
UNIT II

ASSIGNMENT SHEET #2--SELF-ASSESSMENT OF PERSONAL BEHAVIOR

Directions: Read each statement carefully and then place a check (✓) in the column that describes your usual behavior toward other people. Be truthful with yourself.

Behavior	Always	Often	Sometimes	Seldom	Never
1. I carry out my promises					
2. I go out of my way to help others					
3. I enjoy working with other people					
4. I cooperate with others at home and on the job					
5. I dress neatly					
6. I am cheerful and happy					
7. I give help when it is needed					
8. I speak clearly but softly					
9. I avoid losing my temper when people irritate me					
10. I try to be modest about my accomplishments					
11. I avoid criticizing other people					
12. I avoid arguments					
13. I disapprove of gossip					
14. I am in good health most of the time					
15. I try to be tolerant of other people and other ways of doing things					
16. I put things back where they belong					
17. I clean up after myself					

ASSIGNMENT SHEET #2

	Behavior	Always	Often	Sometimes	Seldom	Never
18.	I can be depended upon					
19.	I try not to make embarrassing remarks					
20.	I complete my work on time					
21.	I use equipment properly					
22.	I listen courteously					
23.	I am punctual in keeping appointments					
24.	I am honest in dealing with others					
25.	I respect my instructors					
26.	I follow orders with judgment					
27.	I consider the interests of others					
28.	I accept responsibility for my mistakes					
29.	I am loyal to my friends					
30.	I avoid showing envy of other people's things					
	Total					

Note the number of items that you have checked in each column. You might wish to repeat this self-assessment and evaluate your growth in personal behavior.

INTRODUCTION TO PERSONAL VOCATIONAL RELATIONSHIPS
UNIT II

ASSIGNMENT SHEET #3--DISCUSSION OF INFLUENCES ON PERSONALITY AND MENTAL HEALTH

1. What is self-esteem? Show ways in which an individual's self-esteem can be increased or lessened.

2. Distinguish between self-confidence and egotism. Give examples of each.

3. How cooperative are you in your relationships with others, your co-workers, or family and associates? Give examples of three instances during the past week that show your attitude of cooperation (or lack of cooperation.)

4. Discuss the possible effect on a person's behavior of each of the following:

   a. Exceptional success in scholastic achievement

ASSIGNMENT SHEET #3

b. Election to a class office

c. Death of a close friend

d. An auto accident

e. Moving to a new area where you have no friends or relatives

f. Success or failure in nursing

g. Unusually hot or cold weather

INTRODUCTION TO PERSONAL VOCATIONAL RELATIONSHIPS
UNIT II

TEST

1. Match the terms on the right to the correct definition.

______a. Transmission of physical and mental characteristics from parent to offspring

______b. Present at and existing from the time of birth

______c. Surroundings or influence

______d. A complete state of mental, physical, and social well-being and not the mere absence of disease or infirmity

______e. Process of using food for growth and development

______f. A shortage or a lack

______g. Science of health and its maintenance

______h. Periodic discharge through the vagina of blood and tissues from a non-pregnant uterus

______i. A hollow, pear-shaped female organ of reproduction; the womb

______j. Bodily discharge of waste products

______k. Prevention of a disease by inoculation or vaccination

______l. Diversion; refreshment of body and mind

______m. Using the body efficiently, safely, and without undue fatigue

1. Attitude
2. Body mechanics
3. Confidant
4. Congenital
5. Deficiency
6. Elimination
7. Environment
8. Ethnic
9. Health
10. Heredity
11. Hygiene
12. Immunization
13. Menses
14. Nutrition
15. Personality
16. Poise
17. Posture
18. Prejudice
19. Recreation
20. Role
21. Tension
22. Uterus

_____n. Sum total of a person's behavior, characteristics, attitudes, and habits

_____o. Ability to be composed and self-controlled in pleasant or unpleasant situations

_____p. A pattern of mental views established by prior experience

_____q. Arrangement of the body parts in relation to each other

_____r. Stress; accumulation of pressures

_____s. Pertaining to a group of people classed according to common race, creed, or nationality

_____t. Preconceived judgment or opinion

_____u. One to whom information can be entrusted

_____v. Function assumed by an individual

_____w. An exaggerated sense of self-importance

_____x. Confidence in one's self and abilities

_____y. Self-respect; how one regards himself

_____z. Elusive quality that makes one attractive to others

23. Self-confidence

24. Egotism

25. Charm

26. Self-esteem

2. List six factors which affect health.

a.

b.

c.

d.

e.

f.

3. Write a short paragraph about each of the five factors in maintaining physical health.

   a. Personal care and hygiene

   b. Nutrition - Basic four food groups and requirements

   c. Rest and recreation

   d. Physical activity

   e. Body mechanics

4. Discuss briefly the seven factors involved in maintaining mental health.

   a. Personality

b. Habits

c. Charm

d. Poise

e. Attitudes

f. Tensions

g. Cultures

5. Name five of the six personal qualifications.

a.

b.

c.

d.

e.

6. State an explanation or example of the rules of on-duty conduct.

   a. Be punctual

   b. Wear the uniform proudly and correctly

   c. Be cooperative

   d. Be honest

   e. Observe rules of etiquette

   f. Avoid unethical conduct

   g. Answer telephone professionally

h. Do not leave your assigned area without permission

i. Nurses do not expect or accept tips or expensive gifts from patients

INTRODUCTION TO PERSONAL VOCATIONAL RELATIONSHIPS
UNIT II

ANSWERS TO TEST

1. a. 10
   b. 4
   c. 7
   d. 9
   e. 14
   f. 5
   g. 11
   h. 13
   i. 22
   j. 6
   k. 12
   l. 19
   m. 2
   n. 15
   o. 16
   p. 1
   q. 17
   r. 21
   s. 8
   t. 18
   u. 3
   v. 20
   w. 24

   x. 23
   y. 26
   z. 25

2. Any six of the following
   a. Heredity or congenital disorders
   b. Environment
   c. Infancy and early childhood
   d. Nutrition
   e. Injuries or accidents
   f. Increased mobility
   g. Medical attention
   h. Personal habits
3. Discussion should include the following
   a. Personal care
      1) Bathing--Close personal contact makes a daily bath and use of deodorants desirable
      2) Dental care
         a) Brush teeth after eating
         b) Have regular dental check-up
      3) Clothing and uniform--Wear clean clothing and undergarments each day
      4) Hands and nails
         a) Hands must be clean and skin smooth
         b) Nails should be short and well-kept
      5) Hair
         a) Clean
         b) Becomingly arranged and off the collar

- 6) Foot care
  - a) Clean, well-fitted hose
  - b) Comfortable, suitable shoes
- 7) Make-up
  - a) Use sparingly
  - b) Apply carefully
- 8) Elimination--Regulate by correct eating habits and exercise
- 9) Immunization
  - a) Protects against disease
  - b) Prevents spread of disease
- 10) Regular physical examination--Self examination of breasts

b. Nutrition--Basic four food groups and daily requirements

- 1) Bread and cereal--Four or more servings
- 2) Meat, poultry, fish, eggs, and legumes--Two or more servings
- 3) Fruits and vegetables--Four or more servings daily including one deep yellow or leafy green and one citrus
- 4) Milk, cheese, ice cream--Two or more servings

c. Rest and recreation

- 1) Adequate amount of sleep
- 2) Participation in a sport, hobby, or other pastime regularly

d. Physical activity

- 1) Correct posture--Standing, walking, or sitting erect
- 2) Adequate exercise

e. Body mechanics

- 1) Base of support is related to body balance
- 2) Work close to an object to prevent unnecessary reaching and strain on the muscles

3) Slide, roll, push or pull an object rather than lifting it

4) When lifting is necessary, use longest and strongest muscles of legs and arms to provide power

4. Discussion should include:

a. Personality

1) Determined by heredity and environment

2) Can be changed by conscious action over a period of time

b. Habits

1) Change and modify throughout life

2) Can break an undesirable habit by substituting a more desirable one

c. Charm

1) Can be developed

2) Closely related to poise

d. Poise

1) May take much time and effort to develop

2) Lends assurance and confidence

e. Attitudes

1) Positive attitudes help one to see that life is something good and challenging

2) Negative attitudes stifle growth and achievement

f. Tension

1) Can be positive or negative

2) Coping with tension

a) Discuss problems with someone who can be trusted

b) If no confidant is available, write a detailed letter and then destroy it

c) Work off tension with physical activity such as cleaning a closet or taking a walk

- g. Cultures
  - 1) Ethnic influences
    - a) Food preferences
    - b) Reaction to pain or illness
    - c) Religious beliefs and practices
    - d) Language
  - 2) Prejudices
    - a) Acquired from others
    - b) Result from ignorance, fear, insecurity, inferiority
    - c) Can be changed
  - 3) Hang-ups
    - a) Modern cliche
    - b) Motivating force either positive or negative
    - c) Biased opinion which influences attitudes, behavior, judgement, decision making, and action
    - d) Judgement based on one's own life experiences (a fixed opinion)

5. Any five of the following
   - a. Concern for self and others
   - b. Cheerfulness
   - c. Patience
   - d. Loyalty
   - e. Dependability
   - f. Perserverance
   - g. Tact

6. Explanation and examples should contain some of the following

   (NOTE: May include others given in class discussion.)

   - a. Be punctual
     - 1) Report on and off duty at designated time

  - 2) Return from meals and breaks promptly
  - 3) Notify proper person of tardiness or absence in advance

b. Wear the uniform proudly and correctly

(NOTE: Explanation should show that student is aware of proper wearing of the uniform.)

c. Be cooperative

  - 1) Do assigned duties correctly
  - 2) Accept assignment changes
  - 3) Work harmoniously with others

d. Be honest

  - 1) To self by doing what you are properly prepared to do
  - 2) To patients by providing assistance as needed
  - 3) To employer by using time, equipment, and supplies wisely

e. Observe rules of etiquette

  - 1) Assist patient's families and visitors
  - 2) Be helpful and courteous always
  - 3) Help maintain a pleasing atmosphere

f. Avoid unethical conduct

  - 1) Discuss patient care and problems in the proper place
  - 2) Avoid "shop talk" in public places

g. Answer telephone professionally. Answer the phone by stating ward or unit and your name and title

h. Do not leave your assigned area without permission

  - 1) Report to charge nurse when going to meals or on breaks
  - 2) Report off duty to charge nurse

i. Nurses should not expect or accept tips or personal gifts from patients

COMMUNICATIONS
UNIT III

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to define and discuss communication in the nursing concept. This knowledge will be evidenced by scoring eighty-five percent on the unit test and by demonstrating communication ability to the satisfaction of the instructor.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms used in communications with the correct definition.
2. Discuss the purposes of communication.
3. List three methods of communication.
4. Name four techniques of verbal communication with patients.
5. Describe techniques of verbal communication with patients.
6. List techniques of non-verbal communications.
7. Describe the techniques of non-verbal communications.
8. Describe five barriers to communication.
9. Discuss the development of clinical skills.

COMMUNICATIONS
UNIT III

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information and assignment sheets.

   E. Additional instructions and information are given on the answers to assignment sheet. Some advance preparation by the instructor will be required before providing the students with the assignment sheets.

      1. Assignment Sheet #1--Equipment needed includes a tray, a cloth to cover tray and articles, and ten or twelve items such as pen, thermometer, vase, stapler, safety pin, paperweight, eraser, chalk, note pad, paper clip, watch, and scissors.

      2. Assignment Sheet #2--Dictionary for each student (not a medical dictionary)

      3. Assignment Sheet #3--No additional preparation needed

      4. Assignment Sheet #4--Check reading list given with student assignment sheet to see if you have one reference magazine for each student. If not, look for other relevant magazine articles.

   F. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Complete assignment sheets.

   E. Take test.

III. Affective objective--The student will demonstrate the ability to effectively communicate throughout the entire course of instruction to the satisfaction of the instructor.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Assignment sheets

    1. Assignment Sheet #1--Develop Observation

    2. Assignment Sheet #2--Interpret Communication

    3. Assignment Sheet #3--Test Clinical Skills

    4. Assignment Sheet #4--Reference List-Complete Assigned Readings

  D. Answers to assignment sheets

  E. Test

  F. Answers to test

II. References:

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E. Lockerby, Florence K. *Communications for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1963.

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COMMUNICATIONS
UNIT III

INFORMATION SHEET

I. Terms and definitions

- A. Communication--The exchange of thoughts, feelings, and information by verbal or non-verbal messages
- B. Impression--What the person takes in

  Examples: Listening, reading
- C. Expression--What the person gives out

  Examples: Acting, speaking, writing
- D. Cliché--A trite, automatic question or response
- E. Inflection--Change in pitch or loudness of the voice
- F. Interview--Obtain and evaluate information
- G. Report--To tell another; a written record or summary

  Example: Daily report
- H. Medical record--Patient's chart; the written legal record of the history and progress of a patient
- I. Accurate--Free from error
- J. Brief--Short; containing only essential information
- K. Legible--Plain; easily read
- L. Attentive--Observant; aware of the needs of others
- M. Unique--One of a kind
- N. Evaluation--Examination and assessment
- O. Identify--Recognize; be aware of
- P. Observation--Noting a fact or occurrence
- Q. Perception--Result of an observation; awareness of a symptom
- R. Stereotype--Something conforming to a fixed or general pattern
- S. Barrier--A barricade; something that hinders or separates

INFORMATION SHEET

T. Verbal--Relating to or consisting of words spoken rather than written

U. Preconception--An opinion formed at an earlier time or from previous experience

V. Clinical--Pertaining to actual observation and treatment of patients

II. Purposes of communication

A. To know the patient

1. Every human being is unique and will respond to illness in his own way

2. Provides a basis for evaluation of the patient's progress

3. Helps in treating the patient, not just his symptoms

B. To identify the patient's needs

1. Observe by visually checking the patient's condition

2. Listen and evaluate the patient's verbal and non-verbal communication

3. Read the patient's record

C. To meet the patient's needs

1. Required assistance may be given by observer (nurse) or by another health worker

2. Needs of the patient may include physical care or assistance, health teaching, information, encouragement, and emotional support

D. To interact with other members of the health team

III. Methods of communication

A. Verbal impressions

Examples: Listening, reading

B. Verbal expressions

Examples: Speaking, writing

C. Non-verbal expressions

Examples: Gestures, facial expressions, voice tones or inflections

INFORMATION SHEET

IV. Techniques of verbal communication with patients

- A. Open-end comments or questions
- B. Reflecting or repeating
- C. Sharing perceptions
- D. Deliberate use of cliches'

V. Descriptions of techniques of verbal communication with patients

A. Open-end comments or questions--Bridging or transitional phrases that encourage a patient to continue speaking

Example: "And then you"
"You were saying?"
"And after that you?"

B. Reflecting or repeating

1. Repeating part of patient's statement in form of a question

Example: Patient, "I want to go home."
Nurse, "You want to go home?"
Patient, "Yes, I'm so worried about my children."

2. Reflecting a feeling or impression

Example: Nurse, "Good morning, Mr. Brown, how are you today?"
Mr. Brown, "Oh, I'm pretty good, nurse."

The nurse gets the impression from Mr. Brown's inflection and tone of voice that he is depressed. She reflects the feeling she has perceived by saying,

"You seem sad this morning, Mr. Brown."

By reflecting feelings and impressions, the nurse gives the patient an opportunity to talk about his feelings.

C. Sharing perception-Nurse shares perceptions with patient

Example: Nurse notices that patient's hands are trembling. Instead of automatically deciding why, she says to patient, "Your hands are trembling. Can you tell me why?"

INFORMATION SHEET

D. Deliberate use of cliches'

1. Should be used only to show genuine interest and not just to have something to say

   Example: Nurse, "What's the good word?"
   Patient, "The test was normal."

2. When used thoughtfully, cliches' may encourage a patient to confide in the nurse

VI. Techniques of non-verbal communication

A. Touching

B. Feeling

C. Facial expressions

D. Gesturing

E. Posturing

VII. Descriptions of non-verbal communication

A. Touching--Transmitting a message through physical contact

B. Feeling--Examining or testing by palpation

C. Facial expressions--Making opinions or feelings known

D. Gesturing--Moving limbs or body

E. Posturing--Assuming a position for effect

VIII. Barriers to communication

A. Failure to perceive patient as a unique human being--Stereotypes and preconceptions prevent one from seeing the other person as an individual

Examples: "All male patients are cooperative."
"All (Irish, Italian, Jewish, Indian, Catholic) patients act in certain ways."
"All nurses are cold and hard-hearted."

B. Failure to recognize levels of meaning in communication

1. Statements of patient may have hidden meaning

INFORMATION SHEET

2. Nurse answers patient's question too quickly without checking for patient's meaning and intention

   Example: Patient, "When am I going home?"
   Nurse, "Ask your doctor."

   This question may mean any or some of the following:

   a. The patient might want to know the date and time of his discharge

   b. The patient might be concerned about having sufficient insurance or finances to pay his hospital bill

   c. He might be checking to see if the doctor has signed his discharge slip

   d. He might need to telephone someone to come after him

   e. He might want to know if he will be getting well

C. Failure to listen

   1. Nurse is tired, preoccupied, bored, or disinterested

   2. Patient may be too upset or ill to understand what he is hearing

      (NOTE: Physical attention or its lack is perceived as quickly as the spoken message.)

D. Using cliches' and automatic responses--Cliches' when used to avoid interaction hinder communication

   Examples: "Don't worry. Everything will be fine."
   "The patient down the hall had the same surgery last week and he is fine."
   "It's only minor surgery."
   "There's nothing to worry about."
   "See Mr. Jones? He is having pain but he isn't complaining."

E. Failure to interrupt or interrupting too soon

   1. Let patient finish a question or complaint before interrupting

   2. On the other hand, interrupt the patient's conversation to clarify unclear comments

   3. Interrupt before so many complaints are given that the situation is confusing or the complaints are forgotten

INFORMATION SHEET

IX. Development of clinical skills

A. Beginning relationship

1. Know the patient is there

(NOTE: Check roster to see which patients are where, and show concern for placement of new patients.)

2. Call the patient by name and introduce self

(NOTE: Generally avoid using nicknames or general names such as "sonny", "Grandma", "Pop." Call patients by last name and title such as Mr. Smith and Miss Adams.)

3. Tell the patient what is expected of him

(NOTE: Should he get undressed and get into bed? Can he wear his own clothing? What personal articles may he keep at his bedside?)

4. Tell the patient what he can expect and when

5. Avoid using technical and medical terms which the patient will not understand

B. Personal contact

1. Voice tone and quality affects the patient

(NOTE: The patient may be too ill to understand the meaning of the words but still hear the sound of your voice. Never say anything within the patient's hearing that you would not want him to hear.)

2. Manner and touch are important communication assets

(NOTE: Manual dexterity communicates your confidence or lack of confidence. A firm, light touch often soothes a restless patient.)

C. Interpreting the patient

1. Help the patient to understand himself and his reactions to his illness and treatment

2. Help the patient's family to understand the patient's need for treatment, quiet, and rest

3. Recognize the patient's unexpressed needs

INFORMATION SHEET

D. Recording patient's care and response

1. Certain kinds of routine information must be charted

   Example: Orders followed, care given, response to therapy, or doctor's visits

2. The patient's record (chart) provides essential information for the doctor to prescribe and the nurse to plan patient care

3. Include personal information on nursing care plans to aid in more successful interaction

E. Nurse-patient involvement

1. Create an atmosphere in which the patient feels free to express his feelings

2. Accept the patient as a person who has the right to free expression

3. Try to understand why the patient feels the way he does

4. Work with the patient, helping him to help himself

5. Care enough to do your very best

COMMUNICATIONS
UNIT III

ASSIGNMENT SHEET #1--DEVELOP OBSERVATION

Following the instructor's directions, complete the needed information for the observation activities listed below.

1. List as many articles as you can recall seeing on the tray.

2. Identify the sounds you have heard.

3. Jot down color of eyes and hair, height and any unusual physical features by which three specific individuals can be identified.

ASSIGNMENT SHEET #1

4. Draw a map to show someone how to reach the hospital from downtown. Provide no spoken instructions in addition to the map.

COMMUNICATIONS
UNIT III

ASSIGNMENT SHEET #2--INTERPRET COMMUNICATION

1. Read the following paragraph from *Communication for Nurses* by Florence K. Lockerby.

> The type of test, objective or essay, indicates its purpose and determines your preparation and test-taking communication. Either type demands the utmost concentration and care in the interpretation of questions, selection, or organization of responses, and final checking and proofing. Paradoxical as it may seem, concise rather than inclusive answers reflect real power. Not what you know, but what you consider relevant and pertinent tests comprehension and intelligence.

2. The words listed here are taken from the paragraph you have just read. In the first space write what you think each word means from its use in the paragraph. Then look up each word in a dictionary and write that definition in the second space.

Terms	Student's Definition	Dictionary Definition
a. Objective		
b. Indicate		
c. Determine		

ASSIGNMENT SHEET #2

d. Utmost

e. Concentration

f. Interpretation

g. Proofing

h. Paradoxical

i. Concise

j. Inclusive

ASSIGNMENT SHEET #2

k. Reflect

l. Relevant

m. Pertinent

n. Comprehension

o. Intelligence

COMMUNICATIONS
UNIT III

ASSIGNMENT SHEET #3--TEST CLINICAL SKILLS

Following the instructor's directions, fill in the needed information for these areas of clinical skills.

1. Observation

2. Interviewing

3. Nurse-patient involvement

COMMUNICATIONS
UNIT III

ASSIGNMENT SHEET #4--REFERENCE LIST-COMPLETE ASSIGNED READINGS

	Author	Publication	Article	Issue	Page
1.	Curry, M.	*RN*	Handling the Language Barrier	May 1968	71
2.	Green, J. A.	*RN*	Helping the Person Adjust to Stress	Oct. 1968	46
3.	Kramer, S. K.	*RN*	The Spanish Lady in 425	Nov. 1968	53
4.	Goldsborough, J.	*AJN*	Involvement	Jan. 1969	66
5.	Velazquez, J. M.	*AJN*	Alienation	Feb. 1969	301
6.	Gozzi, E. K. et al	*AJN*	Gaps in Doctor-Patient Communication-Implications for Nursing Practice	Mar. 1969	529
7.	Cuthbert, B. L.	*AJN*	Switch Off, Tune In, Turn On	June 1969	1206
8.	Freund, H.	*AJN*	Listening With Any Ear At All	Aug. 1969	1651
9.	Golden, P., et al	*AJN*	Therapeutic Communication	Sept. 1969	1928
10.	Haraguchi, K.	*RN*	Relaxation--Aid to Recovery	Dec. 1969	46
11.	Bellass, K. S.	*AJN*	You Have Pain? I Think This Will Help	Oct. 1970	2143
12.	Levine, M. E.	*AJN*	The Intransigent Patient	Oct. 1970	2106
13.	Shaw, M.	*AJN*	Hangman's Break	Dec. 1970	2565
14.	Eisman, R.	*AJN*	Why Did Joe Die	Mar. 1971	501
15.	Klagsbrun, S. C.	*AJN*	Communications in the Treatment of Cancer	May 1971	944

ASSIGNMENT SHEET #4

	Author	Publication	Article	Issue	Page
16.	Sharp, C.	*AJN*	First or Last Name	May 1971	958
17.	Perrine, G.	*AJN*	Needs Met and Unmet	Nov. 1971	2128
18.	Faulkner, B.L.	*AJN*	From First Base to Home Plate	Dec. 1971	2331
19.	Rodger, B.	*AJN*	Therapeutic Conversation and Posthypnotic Suggestion	Aug. 1972	715
20.	Whitson, B. J.	*AJN*	The Puppet Treatment in Pediatrics	Sept. 1972	1612
21.	Van Derwort, D.W.	*AJN*	Both Hands Clapping	June 1973	998
22.	Zollman, J.W.	*AJN*	Experiences With Dying Patients	June 1973	1058

1. Read one of the references on communicating from the list given or from a list compiled by your instructor. Make a report on the article including:
   a. Title of article
   b. Author
   c. Source
   d. Content of article

ASSIGNMENT SHEET #4

e. What evidence of communication ability was in the article?

COMMUNICATIONS
UNIT III

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. Arrange ten or twelve unrelated articles on a tray and cover the tray. Uncover the tray and allow the students to look at it for one minute. Cover the tray and allow three minutes for them to list as many items as possible.
2. To test hearing and identification, ask the students to close their eyes and listen for two minutes. At the end of the time period, have them list as many sounds as they were able to identify.
3. Instruct the students to list characteristics of any three people not in the same room with them.
4. If this map drawing would require too much detail, (such as in an urban area) perhaps it should be changed to ask for directions to the hospital from a closer starting point.

Assignment Sheet #2

2. The definitions of these terms were taken from *Webster's Seventh New Collegiate Dictionary.*
   a. Objective-Expressing or involving the use of facts
   b. Indicate-Point out or point to with more or less exactness
   c. Determine-Settle or decide by choice of possibilities
   d. Utmost-Extreme; of the highest degree
   e. Concentration-Direction of attention on a single object
   f. Interpretation-Explanation; understanding
   g. Proofing-Making a test; checking for accuracy
   h. Paradoxical-Contradictory; inconsistent
   i. Concise-Brief; to the point
   j. Inclusive-Broad; covering all items
   k. Reflect-Give back; make apparent or show
   l. Relevant-Giving evidence to prove or disprove the matters at issue

m. Pertinent-Pertaining to the matter at hand; fitting

n. Comprehension-The capacity for understanding

o. Intelligence-Understanding; knowledge

Assignment Sheet #3

Suggested activities to use for testing the students' clinical skills. Instructor may prefer to use other activities.

1. Observation-Ask the students to describe a room other than the one they are now in, such as another classroom, a reception or waiting room, a room in the patient area, or the snack room. Request that the students include specific characteristics as the number of doors and windows, the color of walls, carpet, and drapes, and articles of furniture or equipment which distinguish the room.

2. Interviewing-Pretend you are hiring a nurse to care for your aging mother who has a fractured hip. What questions would you ask her? What might she ask you?

3. Nurse-patient involvement-You are assigned to take care of Mr. Adam today. When you go into his room you say, "Good morning, Mr. Adam," in a cheerful voice. Mr. Adam answers in an angry tone, "What's good about it?"

    a. How would you respond?

    (Nurse might say, "Mr. Adam you sound ______ (using term to describe patient's feeling such as angry, unhappy, or upset) Perhaps I can help you.")

    b. What might be some reasons for Mr. Adam's apparent anger?

    (Patient may be worried about tests or surgery to be done. He may have slept poorly, have been awakened early, or be experiencing pain or discomfort. He may also have been "mistreated" or poorly treated by other personnel.)

    c. How would you feel in this situation?

    (Would you feel as though you are personally being criticized? Would you feel like helping the patient to become less angry and better pleased with his hospitalization? How would you react if this was the way Mr. Adam always behaved when a nurse entered his room?)

Assignment Sheet #4

On the student assignment sheet, there is a list of articles from nursing magazines pertaining to communications. If these are not available for the class to use in this assignment, the instructor may need to search for others.

COMMUNICATIONS
UNIT III

TEST

1. Match the terms on the right with the correct definition.

______a. The exchange of thoughts, feelings, and information by verbal or non-verbal messages

______b. What the person takes in

______c. What the person gives out

______d. Something conforming to a fixed or general pattern

______e. Change in pitch or loudness of the voice

______f. Obtain and evaluate information

______g. To tell another; a written record or summary

______h. Patient's chart; written legal record of the history and progress of the patient

______i. Free from error

______j. Short; containing only essential information

______k. Plain, easily read

______l. Observant, aware of the needs of others

______m. One of a kind

______n. Examination and assessment

______o. Recognize; be aware of

______p. Noting a fact of occurrence

______q. Result of an observation; awareness of a symptom

______r. Relating to or consisting of words spoken rather than written

1. Accurate
2. Attentive
3. Barrier
4. Brief
5. Cliche'
6. Clinical
7. Communication
8. Evaluation
9. Expression
10. Identify
11. Impression
12. Inflection
13. Interview
14. Legible
15. Medical record
16. Observation
17. Perception
18. Preconception
19. Report
20. Stereotype
21. Unique
22. Verbal

______s. A barricade; something that hinders or separates

______t. A trite, automatic question or response

______u. An opinion formed at an earlier time or from previous experience

______v. Pertaining to actual observation and treatment of patients

2. Discuss the purposes of communication.

a.

b.

c.

d.

3. List three methods of communication and give one example of each.

a.

b.

c.

4. Name four techniques of verbal communication with patients.

   a.

   b.

   c.

   d.

5. Describe techniques of verbal communication with patients.

   a.

   b.

   c.

   d.

6. List five techniques of non-verbal communications.

   a.

   b.

   c.

   d.

   e.

7. Describe the techniques of non-verbal communications listed above.

   a.

   b.

   c.

   d.

   e.

8. Describe five barriers to communication.

   a.

b.

c.

d.

e.

9. Discuss the development of clinical skills.

   a. Beginning relationships

   b. Personal contact

c. Interpreting the patient

d. Recording patient's care and response

e. Nurse-patient involvement

COMMUNICATIONS
UNIT III

ANSWERS TO TEST

1. a. 7
   b. 11
   c. 9
   d. 20
   e. 12
   f. 13
   g. 19
   h. 15
   i. 1
   j. 4
   k. 14
   l. 2
   m. 21
   n. 8
   o. 10
   p. 16
   q. 17
   r. 22
   s. 3
   t. 5
   u. 18
   v. 6

2. Discussion should include some of the following points and may include other facts brought out in class.
    a. To know the patient
        1) Every human being is unique and will respond to illness in his own way
        2) Provides a basis for evaluation of the patient's progress
        3) Helps in treating the patient, not just his symptoms
    b. To identify the patient's needs
        1) Observe by visually checking the patient's condition
        2) Listen and evaluate the patient's verbal and non-verbal communication
        3) Read the patient's record
    c. To meet the patient's needs
        1) Required assistance may be given by the observer (nurse) or by another health worker
        2) Needs of the patient may include physical care or assistance, health teaching or information, encouragement, and emotional support
    d. To interact with other members of the health team
3. a. Verbal impressions--Listening, reading
    b. Verbal expressions--Speaking, writing
    c. Non-verbal expressions--Gestures, facial expressions, voice tones or inflections
4. a. Open-end comments or questions
    b. Reflecting or repeating
    c. Sharing perceptions
    d. Deliberate use of cliches'
5. Descriptions should include
    a. Open-end comments or questions--Bridging or transitional phrases that encourage a patient to continue speaking

b. Reflecting or repeating
    1) Repeating part of patient's statement in form of a question
    2) Reflecting a feeling or impression

c. Sharing perceptions–Nurse shares perceptions with a patient

d. Deliberate use of cliches'
    1) Should be used only to show genuine interest and not just to have something to say
    2) When used thoughtfully, cliches' may encourage a patient to confide in the nurse

6. a. Touching
    b. Feeling
    c. Facial expressions
    d. Gesturing
    e. Posturing

7. Description should include
    a. Touching–Transmitting a message through physical contact
    b. Feeling–Examining or testing by palpation
    c. Facial expressions–Making opinions or feelings known
    d. Gesturing–Moving limbs or body
    e. Posturing–Assuming a position for effect

8. Description should include some of the following information about each of the five barriers to communication.
    a. Failure to perceive the patient as a unique human being–Stereotypes or preconceptions prevent one from seeing the other person as an individual
    b. Failure to recognize levels of meaning in communication
        1) Statements of patient may have hidden meaning
        2) Nurse answers patient's questions too quickly without checking for patient's meaning and intention

c. Failure to listen

1) Nurse is tired, preoccupied, bored, or disinterested

2) Patient may be too upset or too ill to understand what he is hearing

d. Using cliches' and automatic responses–Cliches' used to avoid interaction hinder communication

e. Failure to interrupt or interrupting too soon

1) Let patient finish a question or complaint before interrupting

2) On the other hand, interrupt the patient's conversation to clarify unclear comments

3) Interrupt before so many complaints are given that the situation is confusing or complaints are forgotten

9. Discussion should include the following

a. Beginning relationship

1) Know the patient is there

2) Call the patient by name and introduce self

3) Tell the patient what is expected of him

4) Tell the patient what he can expect and when

5) Avoid using technical and medical terms which the patient will not understand

b. Personal contact

1) Voice tone and quality affects the patient

2) Manner and touch are important communication assets

c. Interpreting the patient

1) Help the patient to understand himself and his reactions to his illness and treatment

2) Help the patient's family to understand the patient's need for treatment, rest, and quiet

3) Recognize the patient's unexpressed needs

d. Recording the patient's case and response

  1) Certain kinds of routine information must be charted

  2) The patient's record provides essential information for the doctor to prescribe and the nurse to plan patient care

  3) Include personal information on nursing care plans to aid in more successful interaction

e. Nurse-patient involvement

  1) Create an atmosphere in which the patient feels free to express his feelings

  2) Accept the patient as a person who has the right to free expression

  3) Try to understand why the patient feels the way he does

  4) Work with the patient, helping him to help himself

  5) Care enough to do your very best

HISTORICAL DEVELOPMENT OF NURSING
UNIT IV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe the highlights of nursing history and discuss some of the current trends in nursing. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Discuss briefly the evolution of nursing from ancient civilization to early twentieth century.
2. Match the names of American women to their chief contribution to nursing.
3. Describe the history of Oklahoma nursing.
4. Discuss recent trends of minorities, women, specialism, and education in nursing.

HISTORICAL DEVELOPMENT OF NURSING
UNIT IV

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information and assignment sheets.

  E. Assist students in preparing for their reports to the class.

  F. Provide periodicals to be used in second assignment sheet.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet and complete each assignment sheet.

  C. Present reports to class.

  D. Take test.

INSTRUCTIONAL MATERIALS

I. Provided in this unit:

  A. Objectives

  B. Information sheet

  C. Assignment sheets

    1. Assignment Sheet #1-Nursing Yesterday

    2. Assignment Sheet #2-Nursing Today and Tomorrow

  D. Test

  E. Answers to test

II. References:

A. Bullough, Vern L. and Bonnie Bullough. *The Emergence of Modern Nursing.* New York: The Macmillan Company, 1969.

B. Dietz, Lena B. and Aurelia R. Lehozky. *History and Modern Nursing.* Philadelphia, Pennsylvania: F. A. Davis Company, 1967.

C. Jamieson, Elizabeth M., Mary F. Sewall, and Eleanor B. Suhrie. *Trends in Nursing History.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1966.

D. Stewart, Isabel M. and Anne L. Austin. *A History of Nursing.* New York: G. P. Putnam's Sons, 1962.

III. Filmstrip–"A History of American Nursing." The American Journal of Nursing Company.

HISTORICAL DEVELOPMENT OF NURSING
UNIT IV

INFORMATION SHEET

I. Evolution of nursing

   A. Ancient civilization

      1. Earliest nursing procedures were carried out by the physician and his assistants

      2. Earliest women nurses cared only for their own families or the women and children of close friends and relatives

   B. Early Christian times

      1. Organized nursing developed as an expression of Christian ideals

      2. Orders of women Christian converts were formed to serve the church and minister to the sick

   C. Dark Ages--Religious orders founded during this troubled era included care of the sick in their ministrations with men providing nursing to men patients and women caring only for women and children

   D. Medieval Period

      1. Monastic orders of monks and nuns continued to provide most of the nursing care

      2. Secular orders were established late in the period for those who desired to serve humanity outside the church's walls

   E. Reformation

      1. Medicine progressed slowly and use of scientific principles was stressed

      2. Nursing declined and was almost forgotten until the nineteenth century

         (NOTE: The decline in nursing occurred due to disturbed political conditions, the general low status of medicine, and the low position of women in society.)

   F. Modern nursing

      1. In 1836, the first organized school of nursing was founded at Kaiserswerth, Germany

INFORMATION SHEET

2. Florence Nightingale, the founder of modern nursing, made nursing the highly respected career that it is today despite much opposition from her family and the influential people of her time

3. In 1873, Bellevue Hospital, New York, began a school of nursing patterned after the Nightingale School in England; the school later became coeducational

4. In the late eighteenth and nineteenth centuries, medicine and nursing made revolutionary progress

G. Practical nursing

1. In 1893, Ballard School, New York, opened the first practical nurse school with a three month course of instruction

2. In 1946, the American Nurses' Association recommended that each state consider legislation for the licensure of the practical nurse

3. In 1957, the National League for Nurses established the Council on Practical Nursing

(NOTE: This is now known as the Council of Practical Nursing Programs.)

II. Contribution of American women to nursing

A. Dorothea Dix–Superintendent of U.S. Army Nursing during the Civil War

B. Linda Richards–First trained nurse in America and organizer of school of nursing at Massachusetts General Hospital

C. Clara Barton–Organized the American Red Cross

D. Jane Delano–Through the Red Cross enrolled nurses for service with the Army and Navy Nurse Corps during World War I

E. Annie W. Goodrich–First director of the Army School of Nursing in 1918

F. Lillian Wald–Founded the Henry Street Settlement in New York, a pioneer visiting nurse service

G. M. Adelaide Nutting–Established the first college-level nursing course at Columbia University in 1907

H. Frances Payne Bolton–Established the Cadet Nurse Corps in 1943

INFORMATION SHEET

III. Nursing in Oklahoma

A. 1908--Twenty-two nurses met in Oklahoma City to organize the State Association of Graduate Nurses

(NOTE: The name of the organization was later changed to the Oklahoma State Nurses Association.)

B. 1909--First nursing practice act passed by the Oklahoma legislature

(NOTE: A two year curriculum of 280 hours of instruction was recommended.)

C. 1912--First examinations for licensure given

(NOTE: By January 1, 1912, 195 nurses were registered by waiver.)

D. 1918--Three year course of study with 440 hours of instruction recommended

E. 1926--One year program with 210 hours of instruction was suggested for nursing attendants

F. 1937--National League of Nursing Education recommended 800 hours of instruction for the three year course of study

(NOTE: The name was changed in 1952 to the National League for Nursing.)

G. 1953--Nursing practice act provided for the establishment of collegiate schools of nursing, schools of practical nursing, and the licensing of practical nurses; three licensed practical nurses were also appointed to serve on the Board of Nurse Registration and Nursing Education with five registered nurses

(NOTE: Between April, 1953 and June, 1954 more than 2,500 nursing practitioners were licensed as licensed practical nurses by waiver.)

H. 1972--10,250 Registered Nurses and 6,734 Licensed Practical Nurses were issued licenses

IV. Trends in Nursing

A. Minorities in nursing

1. Number of men nurses is increasing

(NOTE: One percent of civilian nurses are men; twenty percent of Army Nurse Corps are men.)

2. Role of men nurses is expanding

INFORMATION SHEET

3. Number of black nurses is increasing

   (NOTE: Percentage of black nurses increased from two percent in 1948 to five percent in 1968. Blacks comprise eleven percent of the total U.S. population.)

B. Women in nursing

1. The practice of midwifery is again acceptable

2. Women nurses are being accepted in services formerly restricted to men

   (NOTE: Women nurses are being assigned to naval ships.)

C. Nursing specialism and education

1. Nursing research and technological advances are making specialization of nursing practitioners essential

   Examples: Nurse anesthetists, cardiac and intensive care nurses, flight nurses, emergency nurses, specialists for various conditions such as diabetes or tuberculosis, kidney transplant or dialysis nurses, geriatric, pediatric, and orthopedic nurses

2. Continuing education is necessary to keep returning and practicing nurses aware of new equipment and techniques

3. Nursing specialists are called by various titles such as Nurse Clinician, Clinical Specialist, and Clinical Nurse Specialist

4. Career ladders in education are being developed

   (NOTE: Credit for previous knowledge and experience is being granted.)

D. In Oklahoma--"In own home care" of patients

1. Individuals, called providers, give care to "in own home care" recipients

2. Nurses assist providers in caring for patients by training and supervising them

HISTORICAL DEVELOPMENT OF NURSING
UNIT IV

ASSIGNMENT SHEET #1-NURSING YESTERDAY

In this unit, the history of nursing has been presented briefly. Without any further study of nursing history, the student will undoubtedly be able to give good nursing care. However, to plan intelligently for the future it is necessary to know more of the achievements and mistakes of the past. Therefore, this assignment will encourage the student to focus his attention on one era or one person in nursing history.

With the help of your instructor to avoid duplication of reports, select one era, phase, or person to research and prepare a five minute report to be given in class.

Suggested areas for study:

1. Select one major period such as the historical divisions given in this unit and discuss the influencing factors of that period.

2. Give a biographical sketch of one of the outstanding persons in the history of nursing

3. Discuss the effects of military conflicts on nursing.

4. Explain the relationships between the population increases and the health professions, particularly nursing.

5. Describe the nursing care a patient may have received at various times in history.

6. Discuss some of the early nursing procedures and explain advances in science, medicine, and nursing that have made them obsolete.

   (NOTE: This could be a project for two or more nursing students.)

7. Discuss the effects of transportation and communication on the health professions.

8. Using the panel technique, discuss contributions of outstanding personalities and leaders. Each panel member may portray a character such as: Florence Nightingale, Fabiola, Phebe, Elizabeth of Hungary, a Sister of Hotel Dieu or another early hospital, John Howard, Elizabeth Fry, Fredricke Fliedner, Jeanne Mance, "Mother Bickerdyke" (Mary Ann Ball), Louisa Mae Alcott, Dorothea Dix, Elizabeth Hobson, Lystra Gretter, Linda Richards, or Edith Cavell.

9. Discuss the adoption of uniforms and their changes throughout history.

HISTORICAL DEVELOPMENT OF NURSING
UNIT IV

ASSIGNMENT SHEET #2-NURSING TODAY AND TOMORROW

Trends in nursing are varied. In some areas, practical nurse and associate degree programs are increasing; in others bachelor's and master's degree programs are taking precedence. Many nursing periodicals have articles relating to these trends. Write either a brief essay on how nursing education in your community follows these trends or a resume on a recently published magazine article from a nursing periodical or other periodical such as a women's magazine.

HISTORICAL DEVELOPMENT OF NURSING
UNIT IV

TEST

1. Discuss briefly the evolution of nursing from ancient civilization to early twentieth century.

2. Match the names of the American women on the right to their chief contribution to nursing.

_____a. Superintendent of the U.S. Army Nursing during the Civil War

_____b. Founded the Henry Street Settlement in New York, a pioneer visiting nurse service

_____c. First director of the Army School of Nursing in 1918

_____d. Established the first college level nursing course at Columbia University in 1907

_____e. First trained nurse in America and organizer of school of nursing at Massachusetts General Hospital

_____f. Established the Cadet Nurse Corps in 1943

_____g. Through the Red Cross enrolled nurses for service with the Army and Navy Nurse Corps during World War I

_____h. Organized the American Red Cross

1. M. Adelaide Nutting
2. Linda Richards
3. Jane Delano
4. Dorothea Dix
5. Frances Payne Bolton
6. Clara Barton
7. Lillian Wald
8. Annie W. Goodrich

3. Describe the history of Oklahoma Nursing.

4. Discuss recent trends of minorities, women, specialism, and education in nursing.

HISTORICAL DEVELOPMENT OF NURSING
UNIT IV

ANSWERS TO TEST

1. Discussion should include some of the following:

   a. Ancient civilization

      1) Earliest nursing procedures were carried out by the physician and his assistants

      2) Earliest women nurses cared only for their own families or the women and children of close friends and relatives

   b. Early Christian times

      1) Organized nursing developed as an expression of Christian ideals

      2) Orders of women Christian converts were formed to serve the church and minister to the sick

   c. Dark Ages-Religious orders founded during this troubled era included care of the sick in their ministrations with men providing nursing to men patients and women caring only for women and children

   d. Medieval Period

      1) Monastic orders of monks and nuns continued to provide most of the nursing care

      2) Secular orders were established late in the period for those who desired to serve humanity outside the church's walls

   e. Reformation

      1) Medicine progressed slowly and use of scientific principles was stressed

      2) Nursing declined and was almost forgotten until the nineteenth century

   f. Modern nursing

      1) In 1836, the first organized school of nursing was founded at Kaiserswerth, Germany

      2) Florence Nightingale, the founder of modern nursing, made nursing the highly respected career that it is today despite much opposition from her family and the influential people of her time

3) In 1873, Bellevue Hospital, New York, began a school of nursing patterned after the Nightingale School in England; the school later became coeducational

4) In the late eighteenth and nineteenth centuries, medicine and nursing made revolutionary progress

g. Practical nursing

1) In 1893, Ballard School, New York, opened the first practical nurse school with a three month course of instruction

2) In 1946, the American Nurses' Association recommended that each state consider legislation for the licensure of the practical nurse

3) In 1957, the National League for Nurses established the Council on Practical Nursing

2. a. 4

b. 7

c. 3

d. 1

e. 2

f. 5

g. 3

h. 6

3. Description should include some of the following:

a. 1908-Twenty-two nurses met in Oklahoma City to organize the State Association of Graduate Nurses

b. 1909-First nursing practice act passed by the Oklahoma legislature

c. 1912-First examinations for licensure given

d. 1918-Three year course of study with 440 hours of instruction recommended

e. 1926-One year program with 210 hours of instruction was suggested for nursing attendants

f. 1937-National League of Nursing Education recommended 800 hours of instruction for the three year course of study

g. 1953--Nursing practice act provided for the establishment of collegiate schools of nursing, schools of practical nursing, and the licensing of practical nurses; three licensed practical nurses were also appointed to serve on the Board of Nurse Registration and Nursing Education with five registered nurses

h. 1972--10,250 Registered Nurses and 6,734 Licensed Practical Nurses were issued licenses

4. Discussion should include some of the following:

   a. Minorities in nursing

      1) Number of men nurses is increasing

      2) Role of men nurses is expanding

      3) Number of black nurses is increasing

   b. Women in nursing

      1) The practice of midwifery is again acceptable

      2) Women nurses are being accepted in services formerly restricted to men

   c. Nursing specialism and education

      1) Nursing research and technological advances are making specialization of nursing practitioners essential

      2) Continuing education is necessary to keep returning and practicing nurses aware of new equipment and techniques

      3) Nursing specialists are called by various titles such as Nurse Clinician, Clinical Specialist, and Clinical Nurse Specialist

      4) Career ladders in education are being developed

   d. In Oklahoma--"In own home care" of patients

      1) Individuals, called providers, give care to "in own home care" recipients

      2) Nurses assist providers in caring for patients by training and supervising them

LEGAL AND ETHICAL RESPONSIBILITIES
UNIT V

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to define and discuss the legal responsibilities of student nurses and Licensed Practical Nurses. She should know the functions, qualifications, and licensing procedures of Licensed Practical Nurses. This knowledge will be evidenced by scoring eighty-five percent on the unit test and by demonstration during the course of instruction.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with legal and ethical responsibilities to the correct definitions.
2. Describe the three general areas of practice stated by the Oklahoma Nursing Practice Act.
3. Discuss two functions of the Licensed Practical Nurse as given in the statement of functions by the National Federation of Licensed Practical Nurses and American Nurses' Association.
4. Discuss legal responsibilities of the student nurse.
5. Discuss legal responsibilities of the Licensed Practical Nurse.
6. Select from a list the qualifications of the Licensed Practical Nurse as stated in the Oklahoma Nursing Practice Act.
7. List four of the seven causes for revocation of a license as stated in the Oklahoma Nursing Practice Act.
8. Define License by Waiver.
9. List the membership and method of selection of the Oklahoma Board of Nurse Registration and Nursing Education.
10. List five of the seventeen principles in the Code of Ethics adopted by the National Federation of Licensed Practical Nurses.

LEGAL AND ETHICAL RESPONSIBILITIES
UNIT V

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information and assignment sheets.

   E. Locate articles to be read by students in completing the assignment sheet. These are listed in the answers to assignment sheet.

   F. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Complete assignment sheet.

   E. Take test.

III. Affective objective The student nurse will demonstrate her awareness of legal and ethical responsibilities throughout the practical nurse program by following the legal and ethical standards which have been stated and discussed.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Assignment Sheet =1 Complete the Assigned Reading

   D. Answers to assignment sheet

E. Test

F. Answers to test

II. References:

A. Becker, Betty G. and Sister Ruth Ann Hassler. *Vocational and Personal Adjustment in Practical Nursing.* St. Louis, Missouri: The C.V. Mosby Company, 1970.

B. Bush, Christine H. *Personal and Vocational Relationships.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1966.

C. French, Ruth M. *The Dynamics of Health Care.* New York: McGraw-Hill Book Company, 1962.

D. Lesnick, Milton J. and Bernice E. Anderson. *Nursing Practice and the Law.* Philadelphia, Pennsylvania: J.B. Lippincott, 1962.

E. Ross, Carmen F. *Personal and Vocational Relationships in Practical Nursing.* Philadelphia, Pennsylvania: J.B. Lippincott, 1969.

F. Stevens, Marion K. *Personal and Vocational Relationships of the Practical Nurse.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1967.

G. Willig, Sidney H. *The Nurses' Guide to the Law.* New York: McGraw-Hill Book Company, 1970

H. Oklahoma Board of Nurse Registration and Nursing Education: The Oklahoma Nursing Practice Act.

III. Additional materials

A. Films

1. "No Margin for Error." Cincinnati, Ohio: Merrell-National Films.

2. "An Ounce of Prevention." Cincinnati, Ohio: Merrell-National Films.

B. Filmstrip "Legal Implications in Nursing." Garden Grove, California: Trainex Corporation.

LEGAL AND ETHICAL RESPONSIBILITIES
UNIT V

INFORMATION SHEET

I. Terms and definitions

A. Compensation--Payment for services; wages

B. Convalescent--One who is recovering health after an illness

C. Infirm--Of poor or deteriorated vitality

D. Administration--The act of giving

Example: Medication or treatment

E. Function--Duty; task imposed by one's occupation

F. License--A legal document granted by a competent authority to permit a person to practice an occupation

G. Responsibility--The state of being held accountable for something

H. Implementation--The act of carrying out

I. Qualification--A requirement; a condition that must be complied with

J. Moral--Of or relating to the principles of right and wrong in behavior

K. Revocation--The act of annulling or calling back

L. Intemperate--Given to excessive indulgence of appetite or desire

M. Professional--Conforming to the technical and ethical standards of a profession

N. Fraud--Deceit or trickery

O. Felony--A serious crime punishable by law with penalties ranging from imprisonment to death

P. Incompetent--Inadequate or unqualified

Q. Disreputable--Of poor character; not decent

R. Board of Nursing--The government agency that grants nursing licenses and administers nursing practice acts

S. Ethics--A set of principles or values

INFORMATION SHEET

II. The Oklahoma Nursing Practice Act describes practical nursing as the performance of nursing services for compensation in three general areas:

  A. The care of those not acutely ill, such as the convalescent, aged, or infirm

  B. Other care, such as in the case of the more acutely ill, under the supervision and/or direction of a registered professional nurse, or a licensed physician or dentist, which includes the administration of medications and treatments prescribed by a licensed physician or dentist

  C. Teaching of nurse assistants

III. Functions of the Licensed Practical Nurse as given in the statement of functions of the National Federation of Licensed Practical Nurses and the American Nurses' Association

  A. Participates in the planning, implementation, and evaluation of nursing care in complex situations, and in giving nursing care in simple situations by:

    1. Providing for the emotional and physical comfort and safety of patients through

      a. Understanding of human relationships between and among patients, families, and personnel

      b. Recognizing and understanding cultural backgrounds and spiritual needs; respecting the religious beliefs of individual patients

      c. Recognizing and understanding the effects of social and economic problems upon patients

      d. Protecting patients from behavior that would damage their self-esteem or relationship with families, other patients, or personnel

      e. Participating in the development, revision, and implementation of policies and procedures designed to insure comfort and safety of patients and personnel

      f. Assisting the patient with activities of daily living and encouraging appropriate self-care

      g. Considering needs of the patient for an attractive, comfortable, and safe environment

    2. Observing, recording, and reporting to the appropriate person:

      a. General physical and mental condition of patients or signs and symptoms which may be indicative of change

      b. Stresses in human relationships between patients and patients' families, visitors, and personnel

INFORMATION SHEET

3. Performing nursing procedures for which the preparation of the Licensed Practical Nurse has provided the necessary degree of skill and judgment, such as:
    a. Administration of medications and treatments prescribed for the patient
    b. Preparation and care of patients receiving specialized treatments
    c. Performance of special nursing techniques in caring for patients with communicable diseases
    d. Practice of first-aid measures
    e. Preparation and after care of equipment for treatments, including sterilization and observation of aseptic techniques
4. Assisting with the rehabilitation of patients according to the patient care plan through:
    a. Awareness of and encouraging the interests and special aptitudes of patients
    b. Encouraging patients to help themselves within their own capabilities in performing activities of daily living
    c. Knowledge and application of the principles of prevention of deformities; the normal range of motion; body mechanics and body alignment
    d. Utilizing the community resources and facilities for continuing patient care

B. Promotes effectiveness of the employing health service agency through:

1. Utilizing opportunities in contacts with patients' relatives to promote better understanding of policies pertaining to the health service
2. Fostering cooperative effort through understanding the functions of all personnel involved in patient care
3. Utilizing community resources and relationships for better understanding by the public of health services

IV. Legal responsibilities of the student nurse

A. Responsibility is assumed by the student, the nursing supervisor, and the nursing instructor

INFORMATION SHEET

B. Responsibility for action is assigned in some instances to the employing institution and/or the patients' doctor

C. In an emergency, a nurse or nursing student may give first aid

(NOTE: Oklahoma has a Good Samaritan law.)

D. A student nurse should be familiar with the rules and regulations of the institution in which she is a student and should follow them exactly

V. Legal responsibilities of the Licensed Practical Nurse

A. Practical nurses will not legally be permitted to use the title of Licensed Practical Nurse or accept or require the pay of a Licensed Practical Nurse if they are not in fact licensed by a state board of nursing in the states in which they practice

(NOTE: This is known as permissive licensure.)

B. In federal institutions, current licensure in any state is accepted

C. Licensed Practical Nurses are prepared mainly to give supervised nursing care to patients whose condition is not complicated by subtle or serious physiological or psychological conditions

D. In some states Licensed Practical Nurses are permitted to administer medications

(NOTE: In Oklahoma, Licensed Practical Nurses are permitted to administer medications.)

VI. Qualifications of the Licensed Practical Nurse as stated in the Oklahoma Nursing Practice Act

A. Good moral character

B. Two years high school or its equivalent

C. Completion of prescribed curriculum in a state approved program of practical nursing with diploma or certificate

D. Other reasonable preliminary qualification requirements as prescribed by the Oklahoma Board of Nurse Registration and Nursing Education concerning education, maturity, and aptitude

E. Passing a written examination in such subjects as the Oklahoma Board of Registration shall require

(NOTE: Upon passing the examination, the Board shall issue a license to practice as a Licensed Practical Nurse. Such license entitles the person to

INFORMATION SHEET

use the title "Licensed Practical Nurse" and to use the letters "LPN" after her name.)

VII. Causes for revocation of a license as stated in the Oklahoma Nursing Practice Act

A. The person is guilty of fraud or deceit in procuring or attempting to procure a license

B. The person is guilty of felony or of gross immorality that would constitute a felony under the laws of this state

C. The person is unfit or incompetent by reason of gross negligence, disreputable habits, or other like causes

D. The person is habitually intemperate or addicted to the use of habit-forming drugs

E. The person is judicially determined to be mentally incompetent

F. The person is guilty of unprofessional conduct

G. The person is guilty of willfully or repeatedly violating any of the provisions of the Nursing Practice Act

VIII. License by Waiver--Prior to July 1, 1954, a person was eligible for practical nurse licensure by waiver by meeting the following requirements:

A. Submitting certified evidence of having had at least two years of general practical nursing experience approved by the Board of Nurse Registration and Nursing Education before the passage of the Nursing Practice Act and within the five years prior to the act

B. Furnishing evidence of having successfully completed an extension course approved by the board

IX. The Oklahoma Board of Nurse Registration and Nursing Education

A. Membership

1. Five registered nurses who each serve five years

2. Three licensed practical nurses who each serve three years

B. Selection

1. All members must be citizens and residents of Oklahoma

2. Each year the governor appoints one Registered Nurse from a list of five or more Registered Nurses with at least five years experience

INFORMATION SHEET

(NOTE: A list of five names is submitted by the Oklahoma State Nurses Association.)

3. Each year the governor appoints one Licensed Practical Nurse from a list of three or more Licensed Practical Nurses with at least three years experience

   (NOTE: A list of three names is submitted by the Oklahoma State Association of Licensed Practical Nurses.)

X. Code of Ethics for the Licensed Practical Nurse from the National Federation of Licensed Practical Nurses

A. The licensed practical nurse shall practice her profession with integrity

B. The licensed practical nurse shall be loyal to the physician, to the patient, and to her employer

C. The licensed practical nurse strives to know her limitations and to stay within the bounds of these limitations

D. The licensed practical nurse is sincere in the performance of her duties and generous in rendering service

E. The licensed practical nurse considers no duty too menial if it contributes to the welfare and comfort of her patient

F. The licensed practical nurse accepts only that monetary compensation which is provided for in the contract under which she is employed, and she does not solicit gifts

G. The licensed practical nurse holds in confidence all information entrusted to her

H. The licensed practical nurse shall be a good citizen

I. The licensed practical nurse participates in and shares responsibility of meeting health needs

J. The licensed practical nurse faithfully carries out the orders of the physician or registered nurse under whom she serves

K. The licensed practical nurse refrains from entering into conversation with the patient about personal experiences, personal problems, and personal ailments

L. The licensed practical nurse abstains from administering self-medication, and in event of personal illness, takes only those medications prescribed by a licensed physician

INFORMATION SHEET

M. The licensed practical nurse respects the dignity of the uniform by never wearing it in a public place

N. The licensed practical nurse respects the religious beliefs of all patients

O. The licensed practical nurse abides by the Golden Rule in her daily relationship with people in all walks of life

P. The licensed practical nurse is a member of the National Federation of Licensed Practical Nurses, Inc., and the state and local membership associations

Q. The licensed practical nurse may give credit to a commercial product or service, but does not identify herself with advertising, sales, or promotion

(NOTE: The following quotation from *Personal and Vocational Relationships in Practical Nursing* by Carmen F. Ross describes the legal and ethical responsibilities of the Licensed Practical Nurse.)

> A nurse's legal obligations are only a part of the much more extensive code of ethics which has been established by her profession. Consider it this way: if you were to ignore all ethical obligations except your legal ones, theoretically you would not be a public menace, but that is about all that could be said for you. On the other hand, when you live by a nurse's code of ethics, you are not only fulfilling your legal obligations automatically but are also conforming to the much higher standards which the nursing profession has set for its members.

LEGAL AND ETHICAL RESPONSIBILITIES
UNIT V

ASSIGNMENT SHEET #1--COMPLETE THE ASSIGNED READING

Your instructor will assign an outside reading reference for you. Write on this page the source of the article, author, name of article, and a brief discussion of the article.

LEGAL AND ETHICAL RESPONSIBILITIES
UNIT V

ANSWERS TO ASSIGNMENT SHEET

This is a partial list of articles in recent periodicals concerning legal responsibility of nurses. If these are not available, it will be necessary for the instructor to search for others if she/he wishes to use this assignment.

1. Allan, Helen M. "A Britisher Looks at American Nursing," *RN,* 36 (December, 1971).
2. Fonsica, Jeanne. "Induced Abortion--Nursing Attitudes and Action," *American Journal of Nursing,* 68:1022 (May, 1968).
3. Gibbs, Gertrude E. "Will Continuing Education be Required for License Renewal?," *American Journal of Nursing,* 71:2175 (November, 1971)
4. Hershey, Nathan. "Abortion and Sterilization," *American Journal of Nursing,* 70:1927 (September, 1970).
5. Hershey, Nathan. "Nurses Notes--They Can Play a Critical Role in Court," *American Journal of Nursing,* 69: 2403 (November, 1969).
6. Hershey, Nathan. "On the Question of Prolonging Life," *American Journal of Nursing,* 71:521 (March, 1971).
7. Hershey, Nathan. "Perspective in Liability Risk," *American Journal of Nursing,* 70:1511 (July, 1970).
8. Hershey, Nathan. "Prudence and the Coffee Break," *American Journal of Nursing,* 70:2389 (November, 1970).
9. Hershey, Nathan. "The Patient Doesn't Always Win," *American Journal of Nursing,* 71:967 (May, 1971).
10. Hershey, Nathan. "The Surgeon Was Wrong," *American Journal of Nursing,* 70:1063 (May, 1970).
11. Hershey, Nathan. "Who and What Next in Licensure," *American Journal of Nursing,* 71:105 (January, 1971).
12. Hershey, Nathan. "When is a Communication Privileged?", *American Journal of Nursing,* 70:113 (July, 1970).
13. Hershey, Nathan, "You Know What Good Practice Is," *American Journal of Nursing,* 68:1057 (May, 1968).
14. Kasanof, David. "How to Get a License in Another State," *RN,* 41 (January, 1971).
15. Lifeman, Michel. "When Should a Nurse Blow the Whistle?", *RN,* 50 (October, 1971).
16. Nations, Wanda. "Nurse-Lawyer is Patient-Advocate," *American Journal of Nursing,* 73:1039 (June, 1973).

LEGAL AND ETHICAL RESPONSIBILITIES
UNIT V

TEST

1. Match the terms on the right to the correct definition.

______a. Payment for services; wages

______b. One who is recovering health after an illness

______c. Of poor or deteriorated vitality

______d. The act of giving

______e. Duty; task imposed by one's occupation

______f. A legal document granted by a competent authority to permit a person to practice an occupation

______g. The state of being held accountable for something

______h. A serious crime punishable by law with penalties ranging from imprisonment to death

______i. A requirement; a condition that must be complied with

______j. Of or relating to the principles of right and wrong in behavior

______k. The act of annulling or calling back

______l. Given to excessive indulgence of appetite or desire

______m. Deceit or trickery

______n. Inadequate or unqualified

______o. Of poor character; not decent

______p. The government agency that grants nursing licenses and administers nursing practice acts

1. Administration
2. Board of Nursing
3. Compensation
4. Convalescent
5. Disreputable
6. Felony
7. Ethics
8. Fraud
9. Function
10. Implementation
11. Incompetent
12. Infirm
13. Intemperate
14. License
15. Moral
16. Professional
17. Qualification
18. Responsibility
19. Revocation

______q. Conforming to the technical and ethical standards of a profession

______r. The act of carrying out

______s. A set of principles or values

2. Describe the three general areas of practice as stated by the Oklahoma Nursing Practice Act.

   a.

   b.

   c.

3. Discuss two functions of the Licensed Practical Nurse as given in the statement of functions by the National Federation of Licensed Practical Nurses and American Nurses' Association.

   a.

   b.

4. Discuss legal responsibilities of the student nurse.

5. Discuss legal responsibilities of the Licensed Practical Nurse.

6. Select and place an "X" to the left of the qualifications of the Licensed Practical Nurse as stated in the Oklahoma Nursing Practice Act.

______a. Two years high school or its equivalent

______b. Good moral character

______c. Two year college or its equivalent

______d. Completion of an oral interview with instructors of Practical Nurse school

______e. Passing a written examination in such subjects as the Oklahoma Board of Registration shall require

______f. Completion of prescribed curriculum in a state approved program of practical nursing with diploma or certificate

______g. Other reasonable preliminary qualification requirements as prescribed by the Oklahoma Board of Nurse Registration and Nursing Education concerning education, maturity, and aptitude

7. List four causes for revocation of a license as stated in the Oklahoma Nursing Practice Act.

a.

b.

c.

d.

8. Define License by Waiver.

9. List the membership and method of selection of the Oklahoma Board of Nurse Registration and Nursing Education.

10. List five of the seventeen items in the Code of Ethics for the Licensed Practical Nurse adopted by the National Federation of Licensed Practical Nurses.

a.

b.

c.

d.

e.

LEGAL AND ETHICAL RESPONSIBILITIES
UNIT V

ANSWERS TO TEST

1. a. 3
   b. 4
   c. 12
   d. 1
   e. 9
   f. 14
   g. 18
   h. 6
   i. 17
   j. 15
   k. 19
   l. 13
   m. 8
   n. 11
   o. 5
   p. 2
   q. 16
   r. 10
   s. 7

2. The practice of practical nursing means the performance of nursing services for compensation in these areas:

   a. The care of those not acutely ill, such as the convalescent, aged, or infirm

   b. Other care, such as in the case of the more acutely ill, under the supervision and/or direction of a registered professional nurse, or a licensed physician or dentist, which includes the administration of medications and treatments prescribed by a licensed physician or dentist

   c. Teaching of nurse assistants

3. Discussion should include:

   a. Participates in the planning, implementation, and evaluation of nursing care in complex situations, and in giving nursing care in simple situations by:

      1) Providing for the emotional and physical comfort and safety of patients through

         a) Understanding of human relationships between and among patients, families, and personnel

         b) Recognizing and understanding cultural backgrounds and spiritual needs; respecting the religious beliefs of individual patients

         c) Recognizing and understanding the effects of social and economic problems upon patients

         d) Protecting patients from behavior that would damage their self-esteem or relationship with families, other patients, or personnel

         e) Participating in the development, revision, and implementation of policies and procedures designed to insure comfort and safety of patients and personnel

         f) Assisting the patient with activities of daily living and encouraging appropriate self-care

         g) Considering needs of the patient for an attractive, comfortable, and safe environment

      2) Observing, recording, and reporting to the appropriate person:

         a) General physical and mental condition of patients or signs and symptoms which may be indicative of change

         b) Stresses in human relationships between patients and patients' families, visitors, and personnel

      3) Performing nursing procedures for which the preparation of the Licensed Practical Nurse has provided the necessary degree of skill and judgment, such as:

         a) Administration of medications and treatments prescribed for the patient

         b) Preparation and care of patients receiving specialized treatments

        c) Performance of special nursing techniques in caring for patients with communicable diseases

        d) Practice of first-aid measures

        e) Preparation and after care of equipment for treatments, including sterilization and observation of aseptic techniques

    4) Assisting with the rehabilitation of patients according to the patient care plan through:

        a) Awareness of and encouraging the interests and special aptitudes of patients

        b) Encouraging patients to help themselves within their own capabilities in performing activities of daily living

        c) Knowledge and application of the principles of prevention of deformities; the normal range of motion; body mechanics and body alignment

        d) Utilizing the community resources and facilities for continuing patient care

b. Promotes effectiveness of the employing health service agency through:

    1) Utilizing opportunities in contacts with patients' relatives to promote better understanding of policies pertaining to the health service

    2) Fostering cooperative effort through understanding the functions of all personnel involved in patient care

    3) Utilizing community resources and relationships for better understanding by the public of health services

4. The discussion should include the following points:

    a. Responsibility is assumed by the student, the nursing supervisor, and the nursing instructor

    b. Responsibility for action is assigned in some instances to the employing institution and/or the patients' doctor

    c. In an emergency, a nurse or nursing student may give first aid

    d. A student nurse should be familiar with the rules and regulations of the institution in which she is a student and should follow them exactly

5. The discussion should include the following points:

    a. Practical nurses will not legally be permitted to use the title of Licensed Practical Nurse or accept or require the pay of a Licensed Practical Nurse if they are not in fact licensed by a state board of nursing in the states in which they practice

b. In federal institutions, current licensure in any state is accepted

c. Licensed Practical Nurses are prepared mainly to give supervised nursing care to patients whose condition is not complicated by subtle or serious physiological or psychological conditions

d. In some states Licensed Practical Nurses are permitted to administer medications

6. a

b

e

f

g

7. Any four of the following:

a. The person is guilty of fraud or deceit in procuring or attempting to procure a license

b. The person is guilty of felony or of gross immorality that would constitute a felony under the laws of this state

c. The person is unfit or incompetent by reason of gross negligence, disreputable habits, or other like causes

d. The person is habitually intemperate or addicted to the use of habit forming drugs

e. The person is judicially determined to be mentally incompetent

f. The person is guilty of unprofessional conduct

g. The person is guilty of willfully or repeatedly violating any of the provisions of the Nursing Practice Act

8. License by Waiver Prior to July 1, 1954, a person was eligible for practical nurse licensure by waiver by meeting the following requirements:

a. Submitting certified evidence of having had at least two years of general practical nursing experience approved by the Board of Nurse Registration and Nursing Education before the passage of the Nursing Practice Act and within the five years prior to the act

b. Furnishing evidence of having successfully completed an extension course approved by the board

9. a. Membership

   1) Five registered nurses who each serve five years

   2) Three licensed practical nurses who each serve three years

   b. Selection

   1) All members must be citizens and residents of Oklahoma

   2) Each year the governor appoints one Registered Nurse from a list of five or more Registered Nurses with at least five years experience

   3) Each year the governor appoints one Licensed Practical Nurse from a list of three or more Licensed Practical Nurses with at least three years experience

10. Any five of the following

   a. The licensed practical nurse shall practice her profession with integrity

   b. The licensed practical nurse shall be loyal--to the physician, to the patient, and to her employer

   c. The licensed practical nurse strives to know her limitations and to stay within the bounds of these limitations

   d. The licensed practical nurse is sincere in the performance of her duties and generous in rendering service

   e. The licensed practical nurse considers no duty too menial if it contributes to the welfare and comfort of her patient

   f. The licensed practical nurse accepts only that monetary compensation which is provided for in the contract under which she is employed, and she does not solicit gifts

   g. The licensed practical nurse holds in confidence all information entrusted to her

   h. The licensed practical nurse shall be a good citizen

   i. The licensed practical nurse participates in and shares responsibility of meeting health needs

   j. The licensed practical nurse faithfully carries out the orders of the physician or registered nurse under whom she serves

   k. The licensed practical nurse refrains from entering into conversation with the patient about personal experiences, personal problems, and personal ailments

l. The licensed practical nurse abstains from administering self-medication, and in event of personal illness, takes only those medications prescribed by a licensed physician.

m. The licensed practical nurse respects the dignity of the uniform by never wearing it in a public place

n. The licensed practical nurse respects the religious beliefs of all patients

o. The licensed practical nurse abides by the Golden Rule in her daily relationship with people in all walks of life

p. The licensed practical nurse is a member of the National Federation of Licensed Practical Nurses, Inc., and the state and local membership associations

q. The licensed practical nurse may give credit to a commercial product or service, but does not identify herself with advertising, sales, or promotion

NURSING AND COMMUNITY ORGANIZATIONS
UNIT VI

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to list and discuss nursing organizations and health publications. She should be able to name community resources for patients' assistance and other organizations concerned with health within the community and discuss responsibilities of the Licensed Practical Nurse in the community. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with nursing and community organizations to the correct definition.
2. Describe the membership of five nursing organizations.
3. Discuss the need for participation in nursing organizations.
4. Discuss the need for interrelation among professional nursing organizations.
5. Write the common function of all nursing organizations.
6. Match publications with the organization that sponsors them.
7. Name four community resources for patients' assistance.
8. Name other organizations concerned with health within the community.
9. Discuss the community responsibilities of the Licensed Practical Nurse.

NURSING AND COMMUNITY ORGANIZATIONS
UNIT VI

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objective sheet.
- B. Provide students with information and assignment sheets.
- C. Discuss terminal and specific objectives.
- D. Discuss information and assignment sheets.
- E. Provide students with nursing publications for use in completing Assignment Sheet #1.
- F. Give test.

II. Students:

- A. Read objectives.
- B. Study information sheet.
- C. Complete assignment sheets.
- D. Share results of assignment sheets with class.
- E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Assignment sheets
    - 1. Assignment Sheet #1--Complete Assigned Readings
    - 2. Assignment Sheet #2--Locate Health Agencies
- E. Answers to assignment sheets
- F. Test
- G. Answers to test

II. References:

A. Bush, Christine H. *Personal and Vocational Relationships.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1966.

B. Chamberlain, Edith M. *Orientation to Nursing.* New York: McGraw-Hill Book Company, 1962.

C. Hasler, Doris and Norman B. Hasler. *Personal, Home and Community Health.* New York: Macmillan Company, 1967.

D. Morison, Luella J. and Mary A. Farris. *Approaches for Co-Workers in Professional Nursing.* St. Louis, Missouri: The C. V. Mosby, 1962.

E. Ross, Carmen F. *Personal and Vocational Relationships in Practical Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1969.

F. Stevens, Marion K. *Personal and Vocational Relationships of the Practical Nurse.* Philadelphia, Pennsylvania: W. B. Saunders, 1967.

NURSING AND COMMUNITY ORGANIZATIONS
UNIT VI

INFORMATION SHEET

I. Terms and definitions

   A. Alumna--Female graduate of a school or college

   B. Alumnae--Plural of alumna

   C. Interrelation--Mutual relationship; working together

   D. Alumnus--One who has attended or graduated from a school

   E. Alumni--Plural of alumnus

II. Membership of nursing organizations

   A. Alumnae associations

      1. Graduates of a particular school

      2. Sometimes nurses who graduated from other schools may be granted special membership in employer-hospital alumnae association

   B. American Nurses' Association--Registered Nurses

   C. National League for Nursing

      1. Registered Nurses

      2. Practical nurses

      3. Nursing assistants

      4. Agencies and members of allied health professions

      5. Others interested in nursing

   D. National Association for Practical Nurse Education and Service, Inc.

      1. Licensed Practical and Vocational Nurses

      2. Registered Nurses

      3. Physicians

INFORMATION SHEET

   4. Hospital administrators

   5. Health and welfare workers

   6. Other interested lay persons

  E. National Federation of Licensed Practical Nurses, Inc.--All Licensed Practical and Vocational Nurses

III. Need for participation in nursing organizations

  A. To stimulate interest in trends, problems, and accomplishments of the vocation

  B. To assist the Licensed Practical Nurse to become a better practitioner

  C. To maintain vocational security

  D. To share in the benefits and successes of the group

  E. To permit the Licensed Practical Nurse to contribute according to her capabilities

  F. To give the Licensed Practical Nurse a part in activities affecting policies, standards, legislation, and public relations

  (NOTE: Membership is a privilege and an obligation.)

IV. Need for interrelation between professional nursing organizations

  A. To determine and maintain standards for all participants

  B. To protect and promote the interests of all participants

  C. To work for more effective use of all nurses and other health workers

  D. To coordinate educational programs

  E. To promote understanding and cooperation between all nurses and nursing organizations

V. Common function of all nursing organizations--To promote high standards of nursing practice

VI. Selected nursing and health publications and the organizations which sponsor them

  A. *American Journal of Nursing* by American Nurses' Association (ANA)

  B. *The Journal of Practical Nursing* by National Association for Practical Nurse Education and Service (NAPNES)

INFORMATION SHEET

C. *Nursing Care* by National Federation of Licensed Practical Nurses (NFLPN)
(NOTE: This publication was formerly called *Bedside Nurse.*)

D. *Nursing Outlook* by National League for Nursing (NLN)

E. *Today's Health* by American Medical Association (AMA)

F. *Nursing Research* by ANA and NLN

VII. Community resources

A. Social Security Administration

B. Department of Institutions, Social and Rehabilitative Services

C. State and local departments of health

D. United Fund (Community Chest)

E. Veterans Administration

VIII. Other organizations concerned with health within the community

A. Alcoholics Anonymous

B. American Cancer Society

C. American Council for Nationalities Service

D. American Diabetic Association

E. American Heart Association

G. American Red Cross

H. American Social Health Association

I. Anti-Defamation League of B'nai B'rith

J. Arthritis Foundation

K. Association for the Aid of Crippled Children

L. Boy Scouts of America

M. Catholic Charities

N. Family Service Association

O. Girl Scouts of America

INFORMATION SHEET

P. Jewish Family Service

Q. Muscular Dystrophy Association

R. National Association for Mental Health

S. National Conference of Christians and Jews

T. National Council on Aging

U. National Council of Senior Citizens

V. National Cystic Fibrosis Research Foundation

W. National Foundation

X. National Health Council

Y. National Hemophilia Foundation

Z. National Multiple Sclerosis Foundation

AA. National Rehabilitation Association

BB. National Safety Council

CC. National Social Welfare Assembly

DD. National Society for Crippled Children and Adults

EE. National Society for Prevention of Blindness

FF. National Tuberculosis and Respiratory Disease Association

GG. Parents without Partners

HH. Planned Parenthood Council

II. Protestant Family Service Bureau

JJ. Salvation Army

KK. Synanon Foundation

LL. United Cerebral Palsy Association

MM. United Health Foundation

NN. United Service Organization

INFORMATION SHEET

OO. Visiting Nurse Association

PP. Welfare Planning Council

QQ. Young Men's Christian Association (and Young Women's)

RR. Young Men's Hebrew Association (and Young Women's)

SS. Goodwill Industries

TT. Salvation Army

UU. Coalition for Clean Air

VV. Camp Fire Girls

WW. 4-H Club

IX. Community responsibilities of the Licensed Practical Nurse

A. Register and vote in all elections

B. Follow the laws of the community, state, and nation

C. Appreciate your American heritage

1. Read through the Constitution
2. Refuse to encourage un-American activities
3. Be aware of current legislation

D. Participate in community activities

E. Participate in professional organizations

NURSING AND COMMUNITY ORGANIZATIONS
UNIT VI

ASSIGNMENT SHEET #1--COMPLETE ASSIGNED READINGS

Read one article from each of the health or nursing publications listed below and make a brief report. In each report list the author, name of article, publication and date, and a brief discussion and evaluation of the article.

1. *American Journal of Nursing*
2. *The Journal of Practical Nursing*
3. *Nursing Care*
4. *Nursing Outlook*
5. *Today's Health*
6. *Nursing Research*

NURSING AND COMMUNITY ORGANIZATIONS
UNIT VI

ASSIGNMENT SHEET #2--LOCATE HEALTH AGENCIES

The information sheet lists many voluntary and private health agencies which are available. Using this list as a guide, determine which of these agencies are located in your community. By reading available references or by personal interview, determine at least one function of each agency.

NURSING AND COMMUNITY ORGANIZATIONS
UNIT VI

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

If all the magazines listed in the information sheets are not available, specify how many articles are required reading for this assignment.

Assignment Sheet #2

Possible sources for information are the telephone book, city directories, city or county health departments, and hospital social workers.

NURSING AND COMMUNITY ORGANIZATIONS
UNIT VI

TEST

1. Match the terms on the right with the correct definition.

   ______a. Female graduate of a school or college

   ______b. Plural of alumnus

   ______c. Mutual relationship; working together

   ______d. One who has attended or graduated from a school

   ______e. Plural of alumna

   1. Alumnae
   2. Alumnus
   3. Alumna
   4. Alumni
   5. Interrelation

2. Describe the membership of five nursing organizations.

   a. Alumnae associations

   b. American Nurses' Association

   c. National League for Nursing

d. National Association for Practical Nurse Education and Service, Inc.

e. National Federation of Licensed Practical Nurses, Inc.

3. Discuss the need for participation in nursing organizations.

4. Discuss the need for interrelation among professional nursing organizations.

5. Write the common function of all nursing organizations.

6. Match publications in the right column with the organization which sponsors them.

_____a. American Nurses' Association

_____b. ANA and NLN

_____c. National League for Nursing

_____d. National Federation of Licensed *Practical Nurses*

_____e. National Association for Practical Nurse Education and Service

_____f. American Medical Association

1. *Nursing Research*
2. *Nursing Care*
3. *Today's Health*
4. *American Journal of Nursing*
5. *Nursing Outlook*
6. *The Journal of Practical Nursing*

7. Name four community resources for patients' assistance.

a.

b.

c.

d.

8. Name ten other organizations concerned with health within the community.

a.

b.

c.

d.

e.

f.

g.

h.

i.

j.

9. Discuss the community responsibilities of the Licensed Practical Nurse.

NURSING AND COMMUNITY ORGANIZATIONS
UNIT VI

ANSWERS TO TEST

1. a. 3
   b. 4
   c. 5
   d. 2
   e. 1
2. a. Alumnae associations
      1) Graduates of a particular school
      2) Sometimes nurses who graduated from other schools may be granted special membership in employer-hospital alumnae associations
   b. American Nurses' Association--Registered Nurses
   c. National League for Nursing
      1) Registered Nurses
      2) Practical nurses
      3) Nursing assistants
      4) Agencies and members of allied health professions
      5. Others interested in nursing
   d. National Association for Practical Nurse Education and Service, Inc.
      1) Licensed Practical and Vocational Nurses
      2) Registered Nurses
      3) Physicians
      4) Hospital administrators
      5) Health and welfare workers
      6) Others interested lay persons

   - e. National Federation of Licensed Practical Nurses, Inc.--All Licensed Practical and Vocational Nurses

3. Discussion should include:
   - a. To stimulate interest in trends, problems, and accomplishments of the vocation
   - b. To assist the Licensed Practical Nurse to become a better practitioner
   - c. To maintain vocational security
   - d. To share in the benefits and successes of the group
   - e. To permit the Licensed Practical Nurse to contribute according to her capabilities
   - f. To give the Licensed Practical Nurse a part in activities affecting policies, standards, legislation, and public relations

4. Discussion should include:
   - a. To determine and maintain standards for all participants
   - b. To protect and promote the interests of all participants
   - c. To work for more effective use of all nurses and other health workers
   - d. To coordinate educational programs
   - e. To promote understanding and cooperation between all nurses and nursing organizations

5. To promote high standards of nursing practice

6. a. 4
   - b. 1
   - c. 5
   - d. 2
   - e. 6
   - f. 3

7. Any four of the following:
   - a. Social Security Administration
   - b. Department of Institutions, Social and Rehabilitative Services

- c. State and local departments of health
- d. United Fund (Community Chest)
- e. Veterans Administration

8. The answer will depend upon the organizations which are present within the community

9. Discussion should include:
   - a. Register and vote in all elections
   - b. Follow the laws of the community, state, and nation
   - c. Appreciate your American Heritage
     - 1) Read through the Constitution
     - 2) Refuse to encourage un-American activities
     - 3) Be aware of current legislation
   - d. Participate in community activities
   - e. Participate in professional organizations

THE HEALTH CARE TEAM
UNIT VII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe the organization and types of hospitals. He should be able to discuss units of patient care and distinguish between types of nursing practice. He should be able to define the responsibilities of some members of the health care team. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definition.
2. Describe four classifications of hospitals.
3. Name six of the department heads of the hospital.
4. Define the roles of six members of the health care team other than nurses.
5. Match members of the nursing team to their description.
6. Discriminate between three types of nursing care patterns.
7. Discuss four units of progressive patient care.

THE HEALTH CARE TEAM
UNIT VII

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Make transparency.

  D. Discuss terminal and specific objectives.

  E. Discuss information and assignment sheets.

  F. Assist students in determining how the hospital is organized and which individuals belong in specific positions.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Complete each assignment sheet.

  D. Take test.

INSTRUCTIONAL MATERIALS

I. Provided in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency Master #1--Hospital Organization

  D. Assignment sheets

    1. Assignment Sheet #1--Classification of Hospital

    2. Assignment Sheet #2--Hospital Organization

  E. Test

  F. Answers to test

II. References:

A. French, Ruth M. *The Dynamics of Health Care.* New York: McGraw-Hill Book Company, 1968.

B. Ross, Carmen F. *Personal and Vocational Relationships in Practical Nursing.* Philadelphia, Pennsylvania: J.B. Lippincott Company, 1969.

C. Stevens, Marion K. *Personal and Vocational Relationships of the Practical Nurse.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1967.

III. Additional materials--Films

A. "Helping Hands for Julie." American Medical Association, 1958.

B. "Mrs. Reynolds Needs a Nurse." American Journal of Nursing Company, 1963.

THE HEALTH CARE TEAM
UNIT VII

INFORMATION SHEET

I. Terms and definitions

  A. Therapeutic--Pertaining to the treatment of a disease or condition

  B. Rehabilitation--The process of restoring a person's ability to live and work as normally as possible after a disabling injury or illness

  C. Personnel--Persons employed in an institution or office

  D. Comprehensive--Covering completely; inclusive

  E. Etiquette--Good taste in conduct or appearance

  F. Unethical--Not comforming to ethical or professional standards

  G. Punctual--Prompt; being at a specified place at an appointed time

  H. Compounding--Putting ingredients together to make a specific medication

II. Classifications of hospitals

  A. General--Care for all kinds of patients

  (NOTE: Eighty percent of all hospitals are general hospitals.)

  B. Specific--Treat specific diseases or classifications of patients

  (NOTE: Twenty percent of hospitals are in this category.)

  Examples: Maternity, pediatric, orthopedic, psychiatric, communicable disease

  C. Non-profit--Supported by federal, state, city, or county governments through taxes or supported by private endowments, universities, or churches

  D. Proprietary--Privately-owned, operated for a profit

  (NOTE: A hospital may fit into more than one of these classifications.)

III. Organization of a hospital (Transparency 1)

(NOTE: An example of the organization of a hospital is shown on the transparency master. Assignment Sheet #1 should be completed to localize this organization to your own hospital.)

INFORMATION SHEET

IV. Health care team members and their roles

  A. Physician--Directs medical care, treatment of disease, and maintenance of health

  B. Dentist--Maintains and improves the health of the teeth and related structures

  C. Laboratory technician--Performs laboratory tests

  D. Dietitian--Provides nutritional care including education and counseling to patients

  E. Radiologist--Interprets x-rays and gives radiology treatments

  F. Medical records librarian--Maintains patients' records

  G. Physical therapist--Assists those suffering from disability to regain physical function; rehabilitation

  H. Respiratory therapist--Carries out pulmonary tests and procedures in respiratory disorders

  I. Pharmacist--Prepares compounds and medicines from prescriptions

  J. Social workers--Provides assistance to patients and families in personal problems

  K. Anesthetist--Nurse or physician who gives anesthesia

V. Nursing team

  A. Director of nursing service--Coordinates nursing activity

  B. Head nurse or charge nurse--Assumes responsibility for nursing activities of a ward or unit

  C. Team leader--Makes assignments, directs the team, and is responsible for a specified group of patients

  D. Assistant team leader--Works with the team leader helping to coordinate team activities

  E. Licensed Practical Nurse--Performs direct nursing care requiring skill and responsibility

  F. Nursing student--Performs tasks of responsibility under supervision of a registered nurse instructor

  G. Nursing assistant--Gives simple, direct nursing care

INFORMATION SHEET

H. Ward clerk--Completes clerical and public relations duties

(NOTE: Members of team may vary according to type of patients and personnel available.)

VI. Nursing care patterns

A. Functional nursing--All nurses in a unit participate in the care of all patients; each nursing employee is assigned a specific function which is carried out for all patients in the unit; for instance, one nurse checks orders, another gives medications and/or treatments, and some give baths, make beds, or distribute meals

B. Team nursing--A team cares for a small group of patients; a nurse acts as team leader and plans the care of each patient; assignments are given to team members according to their training and ability; a team plan often combines functional and total care assignments

C. Total care nursing--One nurse is responsible for the total care of the patient including all physical care, administration of treatment, medications, and foods

VII. Units of progressive patient care

A. Intensive care unit

1. Care for patients in a special unit under the constant supervision of a professional nurse

2. May include critically or seriously ill patients, recent surgical patients, or cardiac patients

B. Intermediate care unit

1. Care for convalescing patients

2. Includes those patients who may be ambulatory for short periods, terminally ill patients, or those needing rehabilitative care

C. Self care unit

1. Care for patients who require a minimum of nursing but require some type of medical care or treatment

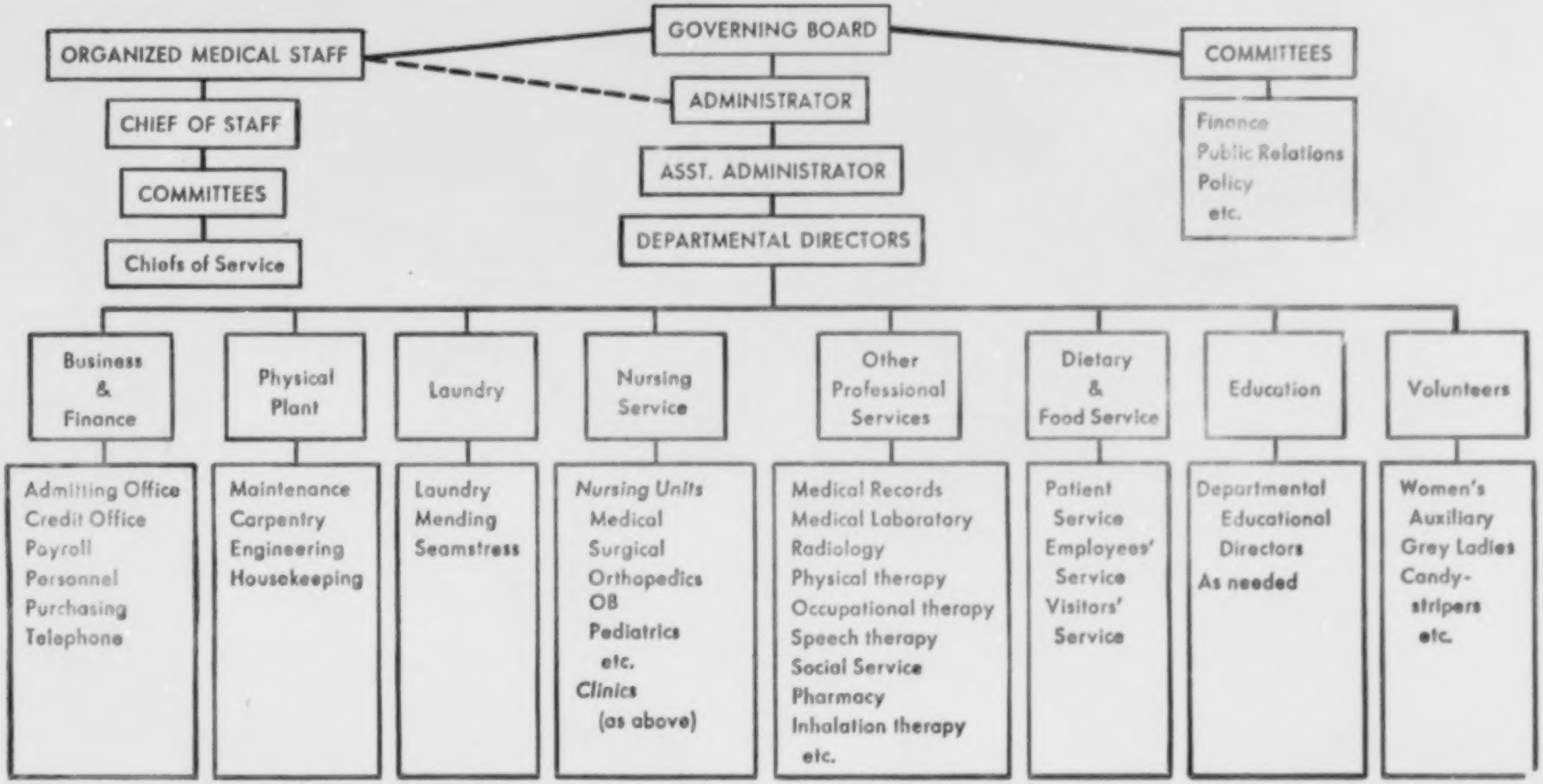
2. Treatment may include x-ray therapy, laboratory tests, physical therapy, supervised medication, or teaching

D. Long term care unit

1. Care for patients who require extended nursing care

2. Includes patients who are not acutely ill but who require treatment, rehabilitation, nursing care, or physical or occupational therapy over an extended period of time

Hospital Organization


GOVERNING BOARD
ORGANIZED MEDICAL STAFF
CHIEF OF STAFF
COMMITTEES
Chiefs of Service
ADMINISTRATOR
ASST. ADMINISTRATOR
DEPARTMENTAL DIRECTORS
COMMITTEES
Finance
Public Relations
Policy
etc.
Business & Finance
Admitting Office
Credit Office
Payroll
Personnel
Purchasing
Telephone
Physical Plant
Maintenance
Carpentry
Engineering
Housekeeping
Laundry
Laundry
Mending
Seamstress
Nursing Service
Nursing Units
Medical
Surgical
Orthopedics
OB
Pediatrics
etc.
Clinics
(as above)
Other Professional Services
Medical Records
Medical Laboratory
Radiology
Physical therapy
Occupational therapy
Speech therapy
Social Service
Pharmacy
Inhalation therapy
etc.
Dietary & Food Service
Patient Service
Employees' Service
Visitors' Service
Education
Departmental Educational Directors
As needed
Volunteers
Women's Auxiliary
Grey Ladies
Candy-stripers
etc.

THE HEALTH CARE TEAM
UNIT VII

ASSIGNMENT SHEET #1--CLASSIFICATION OF HOSPITAL

How is the hospital classified? Investigate to determine the correct classification and give reasons for the answer.

(NOTE: Use the classifications given on the information sheet.)

THE HEALTH CARE TEAM
UNIT VII

ASSIGNMENT SHEET #2--HOSPITAL ORGANIZATION

Using the organizational chart on the transparency master, determine who in the hospital has each job listed on the chart. If the hospital is not organized in this manner, draw an appropriate organizational chart and label each position with the person in that position.

N. I - 173-A

THE HEALTH CARE TEAM
UNIT VII

TEST

1. Match the terms on the right to the correct definition.

_____a. Pertaining to the treatment of a disease or condition

_____b. The process of restoring a person's ability to live and work as normally as possible after a disabling injury or illness

_____c. Covering completely; inclusive

_____d. Not conforming to ethical or professional standards

_____e. Putting ingredients together to make a specific medication

_____f. Prompt; being at a specified place at an appointed time

_____g. Good taste in conduct or appearance

_____h. Persons employed in an institution or office

1. Personnel
2. Therapeutic
3. Etiquette
4. Punctual
5. Compounding
6. Unethical
7. Comprehensive
8. Rehabilitation

2. Describe four classifications of hospitals.

a. General

b. Non-profit

c. Proprietary

d. Specific

3. Name six of the department heads of the hospital.

a.

b.

c.

d.

e.

f.

4. Define the roles of the following six members of the health care team other than nurses.

a. Laboratory technician--

b. Pharmacist--

c. Physician--

d. Dietitian--

e. Social workers--

f. Radiologist--

5. Match the members of the nursing team on the right to their description.

______a. Works with the team leader helping to coordinate team activities	1. Licensed Practical Nurse
______b. Completes clerical and public relations duties	2. Nursing assistant

______c. Assumes responsibility for nursing activities of a ward or unit

______d. Coordinates nursing activity

______e. Performs direct nursing care requiring skill and responsibility

______f. Performs tasks of responsibility under supervision of a registered nurse instructor

______g. Gives simple, direct nursing care

______h. Makes assignments, directs the team, and is responsible for a specified group of patients

3. Director of nursing service
4. Team leader
5. Ward clerk
6. Head nurse or charge nurse
7. Assistant team leader
8. Nursing student

6. Discriminate between the following three types of nursing care patterns by placing an "F" to the left of the functional nursing, "TN" in front of the team nursing and "TC" to the left of total care nursing.

______a. One nurse is responsible for the total care of the patient including all physical care, administration of treatment, medications, and foods

______b. All nurses in a unit participate in the care of all patients; each nursing employee is assigned a specific function which is carried out for all patients in the unit; for instance, one nurse checks orders, another gives medications and/or treatments, and some give baths, make beds, or distribute meals

______c. A team cares for a small group of patients; a nurse acts as team leader and plans the care of each patient; assignments are given to team members according to their training and ability; a team plan often combines functional and total care assignments

7. Discuss four units of progressive patient care.

a. Self care unit

b. Intermediate care unit

c. Long term care unit

d. Intensive care unit

THE HEALTH CARE TEAM
UNIT VII

ANSWERS TO TEST

1. a. 2
   b. 8
   c. 7
   d. 6
   e. 5
   f. 4
   g. 3
   h. 1
2. Description should include:
   a. General--Care for all kinds of patients
   b. Non-profit--Supported by federal, state, city, or county governments through taxes or supported by private endowments, universities, or churches
   c. Proprietary--Privately-owned, operated for a profit
   d. Specific--Treat specific diseases or classifications of patients
3. Answers will depend upon individual situations.
4. a. Performs laboratory tests
   b. Prepares compounds and medicines from prescriptions
   c. Directs medical care, treatment of disease, and maintenance of health
   d. Provides nutritional care including education and counseling to patients
   e. Provides assistance to patients and families in personal problems
   f. Interprets x-rays, gives radiology treatments
5. a. 7
   b. 5

c. 6

d. 3

e. 1

f. 8

g. 2

h. 4

6. a. TC

b. F

c. TN

7. Discussion should include some of the following:

a. Self care unit

1) Care for patients who require a minimum of nursing but require some type of medical care or treatment

2) Treatment may include x-ray therapy, laboratory tests, physical therapy, supervised medication, or teaching

b. Intermediate care unit

1) Care for convalescing patients

2) Includes those patients who may be ambulatory for short periods, terminally ill patients, or those needing rehabilitative care

c. Long term care unit

1) Care for patients who require extended nursing care

2) Includes patients who are not acutely ill but who require treatment, rehabilitation, nursing care, or physical or occupational therapy over an extended period of time

d. Intensive care unit

1) Care for patients in a special unit under the constant supervision of a professional nurse

2) May include critically or seriously ill patients, recent surgical patients, or cardiac patients

UNDERSTANDING THE PATIENT AS A TOTAL PERSON
UNIT VIII

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to discuss the patient's needs and the effects of illness upon the patient and his family. The student should be able to list the rights of patients and important factors in patients' records. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms used in understanding the patient as a total person with the correct definition.
2. Describe the basic needs of patients.
3. Discuss the health facilities from the patient's point of view.
4. Discuss the effects of illness upon the patient.
5. Match names of normal defense mechanisms to the correct description.
6. Describe possible patient reactions to illness.
7. List six of the rights of patients as given in the Bill of Rights for Patients.
8. Discuss family involvement in illness.
9. List important points to remember about keeping patients' records.

UNDERSTANDING THE PATIENT AS A TOTAL PERSON
UNIT VIII

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information and assignment sheets.

   E. Provide students with samples of patient record pages and discuss the use of them.

   F. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussions.

   D. Complete assignment sheet.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit

   A. Objectives

   B. Information sheet

   C. Assignment Sheet #1--Religious Influences

   D. Test

   E. Answers to test

II. References:

   A. Becker, Betty G. and Ruth A. Hassler. *Vocational and Personal Adjustments in Practical Nursing.* St. Louis, Missouri: C. V. Mosby Company, 1970.

B. Milliken, Mary E. *Understanding Human Behavior.* Albany, New York: Delmar Publishers, Inc., 1969.

C. Ross, Carmen F. *Personal and Vocational Relationships in Practical Nursing.* Philadelphia, Pennsylvania: J.B. Lippincott Company, 1969.

D. Stevens, Marion K. *Personal and Vocational Relationships of the Practical Nurse.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1967.

E. Travelbee, Joyce. *Interpersonal Aspects of Nursing.* Philadelphia, Pennsylvania: F.A. Davis Company, 1966.

F. van den Berg, J.H. *The Psychology of the Sickbed.* Pittsburgh, Pennsylvania: Duquesne University Press, 1966.

G. Willig, Sidney H. *The Nurse's Guide to the Law.* New York: McGraw-Hill Book Company, 1970.

UNDERSTANDING THE PATIENT AS A TOTAL PERSON
UNIT VIII

INFORMATION SHEET

I. Terms and definitions

   A. Adolescent--A person between puberty and beginning adulthood

   B. Puberty--The stage of growth at which the reproductive organs become capable of functioning

   C. Geriatric--Pertaining to the medical problems and care of elderly persons

   D. Psychiatric--Pertaining to the branch of medicine that deals with the diagnosis, treatment, and prevention of mental disorders

   E. Defense mechanisms--Mental devices used by people to make themselves more comfortable and to make their behavior seem more reasonable

   F. Threshold of pain--The level at which an individual experiences pain

   G. Maladjustment--Poor or inadequate adaptation; inability to adapt oneself

   H. Alignment--Proper positioning of the body

   I. Bafflement--The feeling of being perplexed or bewildered

   J. Impairment--Diminished in quality or strength

   K. Integral--Essential for completeness

   L. Theoretical--Pertaining to an assumption; speculative

   M. Abstract--Impersonal; detached

   N. Empathy--The capacity for participating in another's feelings

   O. Inadequacy--Deficiency; lack

II. Basic needs of patients

   A. Physical

      1. Personal care and hygiene--Includes bathing and care of the skin, mouth, hair, and nails

      2. Sleep and rest

         a. Additional rest may be needed to aid recovery

         b. The patient's rest can be aided if he is comfortable both physically and emotionally

INFORMATION SHEET

3. Nutrition and fluids
    a. Specific requirements for food and fluids will be ordered by the physician
    b. Proper preparation for mealtime helps increase the appetite and improve food habits
4. Elimination
    a. Body function, diet, fluids, temperature, exercise, habits, privacy, pain, discomfort, and surroundings may affect the patient's elimination
    b. Needs for elimination vary with age and mental and physical condition
5. Body alignment and activity
    a. Good posture during health or illness helps to provide for the proper physiological functioning of the body
    b. Changing the position of the patient makes him more comfortable and helps prevent fatigue and complications
6. Environment
    a. Clean, safe, comfortable surroundings help to protect the patient from disease and infection and promote recovery
    b. The arrangement of the room should be attractive, but should also contribute to the convenience and the safety of the patient
7. Medical treatment and nursing care
    a. The physician prescribes diet, medications, the degree of activity, and treatments for the patient
    b. Nursing care plans are formulated by the nursing team in a manner to promote the results sought by the physician and the nurse

B. Emotional
1. A sick person lives with fear, day and night, and that fear affects his behavior
2. Personalized nursing care includes consideration for the patient's feelings of worry, loneliness, and uncertainty about himself and what might happen to him

INFORMATION SHEET

C. Social

1. The patient's "world" is limited by his illness

2. A patient is not an isolated individual, but part of a family unit

3. He may appreciate having relatives and friends visit although their visits may be tiring to him

   (NOTE: Patient's visitors should be treated with courtesy. At times it may be necessary for the welfare of the patients to limit the number of visitors and the length of their visits.)

4. The patient's individual rights and values should be respected

D. Spiritual and religious

1. Some patients who are indifferent to religion at other times may find religion very meaningful during illness

2. It should be the concern of the nursing staff to know and respect the patient's religious preference

III. Health facilities from the patient's point of view

A. All patients

1. The hospital may be a strange and difficult place or it may be a haven from hardship

2. The patient's attitudes and responses are influenced by past experiences in health facilities, his education, his knowledge about health and disease, and his image of the hospital

3. Medication may cause alteration of behavior

B. Children

1. Hospitalization is usually a frightening experience for children; they fear pain, injections, and separation from familiar faces and surroundings

2. Allowing the child to keep a familiar object such as a toy or favorite blanket could be comforting to him

3. The hospitalized child is usually happier if his mother or other family member can stay with him and share in his care as much as is permissible

INFORMATION SHEET

C. The unmarried mother

1. The unwed mother needs understanding and emotional support from the health personnel

2. It is important to keep confidential any information about the mother and her child; if possible, help her to seek qualified professional help or counseling

D. The elderly

1. The number of geriatric patients is increasing

2. Geriatric patients may be confused and adjust poorly to hospitalization because

    a. Physiological changes of aging may involve impairment of the senses and may cause psychological maladjustments

    b. Change in physical environment may increase confusion

    c. Adverse reaction to medication is more common

E. Mentally ill

1. Nearly half of all the hospital beds in the United States on any given day are occupied by patients with psychiatric problems

2. Psychiatric nursing concepts are an integral part of all nursing; looking for the reasons behind your patient's behavior is the key to good patient care

IV. Effects of illness upon the patient

A. Environment

1. The patient's physical world is limited to the size of his unit

2. His bed may have become a confinement instead of a pleasure

(NOTE: The healthy person is accustomed to a daily change of work and sleep and for him the bed is a pleasurable "retirement" from his world. To the ill person the bed may become a continuous reminder of a changeless, painful existence.)

B. Dependency versus independence

1. The patient is no longer a free agent who determines his own actions

INFORMATION SHEET

2. He realizes that he is dependent upon others for his care and this dependence may cause embarrassment, hostility, irritability, or even anger; it will not necessarily make him grateful for the care he receives

3. The affected part of the patient's body becomes the focus of attention

C. Loneliness

1. Being separated from his normal environment may make the patient feel "alone" causing him to be irritable or withdrawn

2. The patient may want visitors but may be unable to cope with too many or with long visits

D. Pain

1. Threshold of pain varies as well as the individual's reaction and tolerance

2. The patient may endure pain better if he understands what is causing it and how long it will last

3. Pain may be a conversion of worry, fear, loneliness, or lack of information

(NOTE: Patient may complain of pain to gain attention when he needs reassurance.)

E. Death

1. Every person knows that one day he will die, but this knowledge remains theoretical and abstract; during illness, one comes to realize that death is not just an experience that happens to someone else

2. The spiritual and philosophical beliefs of the patient determine his attitude and response toward death and dying

3. The spiritual and philosophical beliefs of the health care personnel will determine their attitude and the care they will give to the dying patient and his family

4. The patient should not be left alone while dying but should receive the best care with empathy and understanding

V. Normal defense mechanisms

A. Rationalization–Presenting a reasonable, socially-acceptable explanation for behavior when the true reason would be painful or unacceptable to the individual

Example: "I didn't have time to go to the doctor."

INFORMATION SHEET

B. Projection—Placing blame for one's inadequacies on someone else or on circumstances

Example: "I'm not well because the other doctor I went to gave me the wrong medicine."

C. Displacement—The transfer of feelings about one person to another person or object

Example: The patient is angry with his wife, so he takes it out on the nurses

D. Compensation—An attempt by the individual to make up for a real or fancied deficiency

Example: A paraplegic patient learns to get from bed to chair by using his arms.

E. Denial—Refusal to admit the truth or to face reality

Example: A patient who will not admit that he is seriously ill

F. Regression—A return to a lower level of behavior

Example: An adult who throws a temper tantrum

G. Sublimation—The direction of a socially unacceptable drive into a more acceptable channel

Example: Anger or hostility turned into physical activity

H. Conversion—Converting emotional drives or conflicts into a physical symptom

Example: The child who develops a stomach ache when it is time to go to school

(NOTE: The purpose of defense mechanisms is to provide a logical reason for behavior. Defense mechanisms are normal unless they become habitual devices for avoiding reality.)

VI. Patient reactions to illness

A. Denial—Usually the first reaction to illness is to deny its presence or to explain it away

B. Bafflement—The patient wonders why this illness or suffering had to happen to him

INFORMATION SHEET

C. Anger--If the individual views his illness as an injustice or an unnecessary affliction, he may react with anger

D. Blame--The patient or his family tries to blame the illness upon something

Example: Patient may believe his illness was caused by working too hard, by carelessness, or because he did not live right.

E. Self-pity--The patient feels sorry for himself to the extent that it prevents him from helping himself and slows down his recovery

F. Withdrawal--The patient unable to accept his illness or disability may refuse to accept or take part in prescribed treatment

G. Acceptance--The patient accepts his illness and is able to cope with whatever suffering or handicap that occurs

VII. The Bill of Rights for Patients

(NOTE: Taken from *AJN*, March 1973, p. 418--"A 12 point patient's bill of rights has been approved by the American Hospital Association and distributed to its 7,000 member hospitals. The 12 point statement indicates that it cannot guarantee the kind of treatment the patient has a right to expect in a hospital, but the hospital's functions of preventing and treating disease, educating members of health professions and patients and conducting clinical research should all be 'conducted with an overriding concern for the patient, and above all, the recognition of his dignity as a human being.'")

A. The patient has the right to considerate and respectful care

B. The patient has the right to obtain from his physician complete current information concerning his diagnosis, treatment, and prognosis in terms the patient can be reasonably expected to understand

C. The patient has the right to receive from his physician information necessary to give informed consent prior to the start of any procedure and/or treatment...Where medically significant alternatives for care or treatment exist, or when the patient requests information concerning medical alternatives, the patient has the right to such information and to know the name of the person responsible for the procedures and/or treatment

D. The patient has the right to refuse treatment to the extent permitted by law, and to be informed of the medical consequences of his action

E. The patient has the right to every consideration of his privacy concerning his own medical care program

F. The patient has the right to expect that all communications and records pertaining to his care should be treated as confidential

INFORMATION SHEET

G. The patient has the right to expect that within its capacity a hospital must make reasonable response to request of a patient for services

H. The patient has the right to obtain information as to any relationship of his hospital to other health care and educational institutions insofar as his care is concerned...and any professional relationships among individuals, by name, who are treating him

I. The patient has the right to be advised if the hospital proposes to engage in or perform human experimentation affecting his care or treatment...has the right to refuse to participate

J. The patient has the right to expect reasonable continuity of care

K. The patient has the right to examine and receive an explanation of his bill regardless of source of payment

L. The patient has the right to know what hospital rules and regulations apply to his conduct as a patient

VIII. Family involvement

A. The patient's family may need the nurses' assistance and understanding almost as much as the patient does

(NOTE: Since the patient is one member of a family, whatever affects the patient's relatives affects the patient.)

B. If relatives are permitted to remain with a seriously ill patient, performing small acts of kindness will demonstrate the nurse's empathy for them

(NOTE: Bringing them coffee or locating restrooms and eating facilities are ways of expressing empathy.)

C. Allowing capable relatives to assist in caring for the patient helps the patient-family relationship

(NOTE: If the patient's illness will require nursing care after he leaves the hospital, learning under a nurse's assistance will help give the family a feeling of security when they are on their own.)

D. The emotional strain or the utter monotony of waiting for something to happen may cause the patient's family to be irritable and demanding

(NOTE: If the nurse remains calm and tactful, she will influence the family members to remain composed.)

INFORMATION SHEET

IX. The patient's record

A. The patient's record is a legal document

(NOTE: The patient is safeguarded through his record, and the record may also protect the doctor, nurse, or hospital in the event of a lawsuit.)

B. The record provides a written account of the observations and care given to the patient

C. Treatment, nursing care, physician's reports, laboratory procedures and results as well as any other pertinent information, such as allergies, should be recorded accurately and promptly

D. All recorded information should be legible, complete, and informative

E. The date and patient's name must appear on every page on which any notation is made

F. All entries on the nurse's note sheets must be signed by the nurse who makes them

G. Any errors in the record must not be erased but should be corrected and initialed by the person making the correction

H. Records should reflect instructions given to the patient and whether such instructions were accepted and acted upon, or rejected

I. The patient's hospital record is retained by the hospital

(NOTE: Records that are kept by nursing homes, doctors' offices, clinics or other health agencies are retained by them.)

J. All information on the patient's record should be kept in strictest confidence; it should not be revealed to anyone except authorized persons

(NOTE: A nurse does not have access to the record of a friend except in an official capacity.)

UNDERSTANDING THE PATIENT AS A TOTAL PERSON
UNIT VIII

ASSIGNMENT SHEET #1-RELIGIOUS INFLUENCES

Describe briefly the beliefs and practices of a religious denomination and how they may affect the behavior during illness of a member of that denomination. This knowledge may be from the student's religious background or from reading a reference.

References

1. Becker, Betty G. and Ruth A Hassler. *Vocational and Personal Adjustments in Practical Nursing.* St. Louis, Missouri: The C.V. Mosby Company, 1970.
2. Bush, Christine H. *Personal and Vocational Relationships.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1966.
3. Ross, Carmen F. *Personal and Vocational Relationships in Practical Nursing.* Philadelphia, Pennsylvania: J.B. Lippincott Company, 1969.
4. Stevens, Marion K. *Personal and Vocational Relationships of the Practical Nurse.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1967.

UNDERSTANDING THE PATIENT AS A TOTAL PERSON *
UNIT VIII

TEST

1. Match the terms on the right with the correct definition

______a. The stage of growth at which the reproductive organs become capable of functioning

______b. Pertaining to the medical problems and care of elderly persons

______c. Poor or inadequate adaptation; inability to adapt oneself

______d. Proper positioning of the body

______e. The level at which an individual experiences pain

______f. Pertaining to the branch of medicine that deals with the diagnosis, treatment, and prevention of mental disorders

______g. A person between puberty and beginning adulthood

______h. Mental devices used by people to make themselves more comfortable and to make their behavior seem more reasonable

______i. Pertaining to an assumption; speculative

______j. The capacity for participating in another's feelings

______k. Essential for completeness

______l. The feeling of being perplexed or bewildered

______m. Diminished in quality or strength

______n. Impersonal; detached

______o. Deficiency; lack

1. Abstract
2. Adolescent
3. Alignment
4. Bafflement
5. Defense mechanisms
6. Empathy
7. Geriatric
8. Inadequacy
9. Impairment
10. Integral
11. Maladjustment
12. Psychiatric
13. Puberty
14. Theoretical
15. Threshold of pain

2. Describe the basic needs of patients.
   a. Physical

   b. Emotional

c. Social

d. Spiritual and religious

3. Discuss health facilities from the patient's point of view.

a. All patients

b. Children

c. The unmarried mother

d. The elderly

e. Mentally ill

4. Discuss the effects of illness upon the patient.

a. Environment

b. Dependency versus independence

c. Loneliness

d. Pain

e. Death

5. Match the terms on the right to the correct description.

______a. The direction of a socially unacceptable drive into a more acceptable channel

______b. A return to a lower level of behavior

______c. Placing blame for one's own inadequacies on someone else or on circumstances

______d. Refusal to admit the truth or to face reality

______e. Converting emotional drives or conflicts into a physical symptom

______f. An attempt by the individual to make up for a real or fancied deficiency

______g. The transfer of feelings about one person to another person or object

______h. Presenting a reasonable, socially-acceptable explanation for behavior when the true reason would be painful or unacceptable to the individual

1. Compensation
2. Conversion
3. Denial
4. Displacement
5. Projection
6. Rationalization
7. Regression
8. Sublimation

6. Describe possible patient reactions to illness.

a. Denial

b. Bafflement

c. Anger

d. Blame

e. Self-pity

f. Withdrawal

g. Acceptance

7. List six of the rights of patients as given in the Bill of Rights for Patients.

a.

b.

c.

d.

e.

f.

8. Discuss family involvement in illness.

9. List at least eight points to remember about keeping a patient's record.

a.

b.

c.

d.

e.

f.

g.

h.

UNDERSTANDING THE PATIENT AS A TOTAL PERSON
UNIT VIII

ANSWERS TO TEST

1. a. 13
   b. 7
   c. 11
   d. 3
   e. 15
   f. 12
   g. 2
   h. 5
   i. 14
   j. 6
   k. 10
   l. 4
   m. 9
   n. 1
   o. 8

2. Description should include some of the following information plus any important points brought out in class.

   a. Physical

      1) Personal care and hygiene-Includes bathing and care of the skin, mouth, hair, and nails

      2) Sleep and rest

         a) Additional rest may be needed to aid recovery

         b) The patient's rest can be aided if he is comfortable both physically and emotionally

3) Nutrition and fluids

  a) Specific requirements for food and fluids will be ordered by the physician

  b) Proper preparation for mealtime helps increase the appetite and improve food habits

4) Elimination

  a) Body function, diet, fluids, temperature, exercise, habits, privacy, pain, discomfort, and surroundings may affect the patient's elimination

  b) Needs for elimination vary with age and mental and physical condition

5) Body alignment and activity

  a) Good posture during health or illness helps to provide for the proper physiological functioning of the body

  b) Changing the position of the patient makes him more comfortable and helps prevent fatigue and complications

6) Environment

  a) Clean, safe, comfortable surroundings help to protect the patient from disease infection and promote recovery

  b) The arrangement of the room should be attractive, but should also contribute to the convenience and the safety of the patient

7) Medical treatment and nursing care

  a) The physician prescribes diet, medications, the degree of activity, and treatments for the patient

  b) Nursing care plans are formulated by the nursing team in a manner to promote the results sought by the physician and the nurse

b. Emotional

1) A sick person lives with fear, day and night, and that fear affects his behavior

2) Personalized nursing care includes consideration for the patient's feelings of worry, loneliness, and uncertainty about himself and what might happen to him

c. Social

   1) The patient's "world" is limited by his illness

   2) A patient is not an isolated individual, but part of a family unit

   3) He may appreciate having relatives and friends visit although their visits may be tiring to him

   4) The patient's individual rights and values should be respected

d. Spiritual and religious

   1) Some patients who are indifferent to religion at other times may find religion very meaningful during illness

   2) It should be the concern of the nursing staff to know and respect the patient's religious preference

3. Discussion should include part of the following information.

   a. All patients

      1) The hospital may be a strange and difficult place or it may be a haven from hardship

      2) The patient's attitudes and responses are influenced by past experiences in health facilities, his education, his knowledge about health and disease, and his image of the hospital

      3) Medication may cause alteration of behavior

   b. Children

      1) Hospitalization is usually a frightening experience for children; they fear pain, injections, and separation from familiar faces and surroundings

      2) Allowing the child to keep a familiar object such as a toy or favorite blanket could be comforting to him

      3) The hospitalized child is usually happier if his mother or other family member can stay with him and share in his care as much as is permissible

   c. The unmarried mother

      1) The unwed mother needs understanding and emotional support from the health personnel

      2) It is important to keep confidential any information about the mother and her child; if possible, help her to seek qualified professional help or counseling

   d. The elderly

      1) The number of geriatric patients is increasing

        2) Geriatric patients may be confused and adjust poorly to the hospitalization because

            a) Physiological changes of aging may involve impairment of the senses and may cause psychological maladjustments

            b) Change in physical environment may increase confusion

            c) Adverse reaction to medication is more common

    e. Mentally ill

        1) Nearly half of all the hospital beds in the United States on any given day are occupied by patients with psychiatric problems

        2) Psychiatric nursing concepts are an integral part of all nursing; looking for the reasons behind your patient's behavior is the key to good patient care

4. Discussion should include part of the following information.

    a. Environment

        1) The patient's physical world is limited to the size of his unit

        2) His bed may have become a confinement instead of a pleasure

    b. Dependency versus independence

        1) The patient is no longer a free agent who determines his own actions

        2) He realizes that he is dependent upon others for his care and this dependence may cause embarrassment, hostility, irritability, or even anger; it will not necessarily make him grateful for the care he receives

        3) The affected part of the patient's body becomes the focus of attention

    c. Loneliness

        1) Being separated from his normal environment may make the patient feel "alone" causing him to be irritable or withdrawn

        2) The patient may want visitors but may be unable to cope with too many or with long visits

    d. Pain

        1) Threshold of pain varies as well as the individual reaction and tolerance

        2) The patient may endure pain better if he understands what is causing it and how long it will last

3) Pain may be a conversion of worry, fear, loneliness, or lack of information

e. Death

1) Every person knows that one day he will die, but this knowledge remains theoretical and abstract; during illness, one comes to realize that death is not just an experience that happens to someone else

2) The spiritual and philosophical beliefs of the patient determine his attitude and response toward death and dying

3) The spiritual and philosophical beliefs of the health care personnel will determine their attitude and the care they will give to the dying patient and his family

4) The patient should not be left alone while dying but should receive the best care with empathy and understanding

5. a. 8

b. 7

c. 5

d. 3

e. 2

f. 1

g. 4

h. 6

6. Description should include the following information.

a. Denial-Usually the first reaction to illness is to deny its presence or to explain it away

b. Bafflement-The patient wonders why this illness or suffering had to happen to him

c. Anger-If the individual views his illness as an injustice or an unnecessary affliction, he may react with anger

d. Blame-The patient or his family tries to blame the illness upon something

e. Self-pity-The patient feels sorry for himself to the extent that it prevents him from helping himself and slows down his recovery

f. Withdrawal- The patient unable to accept his illness or disability may refuse to accept or take part in prescribed treatment

g. Acceptance- The patient accepts his illness and is able to cope with whatever suffering or handicap that occurs

7. List should include any six of the following rights

a. The patient has the right to considerate and respectful care

b. The patient has the right to obtain from his physician complete current information concerning his diagnosis, treatment, and prognosis in terms the patient can be reasonably expected to understand

c. The patient has the right to receive from his physician information necessary to give informed consent prior to the start of any procedure and/or treatment. Where medically significant alternatives for care or treatment exist, or when the patient requests information concerning medical alternatives, the patient has the right to such information and to know the name of the person responsible for the procedures and/or treatment

d. The patient has the right to refuse treatment to the extent permitted by law, and to be informed of the medical consequences of his action

e. The patient has the right to every consideration of his privacy concerning his own medical care program

f. The patient has the right to expect that all communications and records pertaining to his care should be treated as confidential

g. The patient has the right to expect that within its capacity a hospital must make reasonable response to request of a patient for services

h. The patient has the right to obtain information as to any relationship of his hospital to other health care and educational institutions insofar as his care is concerned...and any professional relationships among individuals, by name, who are treating him

i. The patient has the right to be advised if the hospital proposes to engage in or perform human experimentation affecting his care or treatment...has the right to refuse to participate

j. The patient has the right to expect reasonable continuity of care

k. The patient has the right to examine and receive an explanation of his bill regardless of source of payment

l. The patient has the right to know what hospital rules and regulations apply to his conduct as a patient

8. The discussion should include some of the following information.

a. The patient's family may need the nurses' assistance and understanding almost as much as the patient does

b. If relatives are permitted to remain with a seriously ill patient, performing small acts of kindness will demonstrate the nurse's empathy for them

c. Allowing capable relatives to assist in caring for the patient helps the patient-family relationship

d. The emotional strain or the utter monotony of waiting for something to happen may cause the patient's family to be irritable and demanding

9. Any eight of the following may be listed.

a. The patient's record is a legal document

b. The record provides a written account of the observations and care given to the patient

c. Treatment, nursing care, physician's reports, laboratory procedures and results as well as any other pertinent information, such as allergies, should be recorded accurately and promptly

d. All recorded information should be legible, complete, and informative

e. The date and patient's name must appear on every page on which any notation is made

f. All entries on the nurse's note sheets must be signed by the nurse who makes them

g. Any errors in the record must not be erased but should be corrected and initialed by the person making the correction

h. Records should reflect instructions given to the patient and whether such instructions were accepted and acted upon, or rejected

i. The patient's hospital record is retained by the hospital

j. All information on the patient's record should be kept in strictest confidence; it should not be revealed to anyone except authorized persons

INTRODUCTION TO BASIC NURSING
UNIT I

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list the objectives of this course of study and discuss the role of the practical nurse on the health team. This knowledge will be evidenced by scoring eighty-five percent on the unit test and by evaluation throughout the course of study.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. List ten objectives of this course of study, *Basic Nursing Principles and Skills.*
2. List six activities of nursing.
3. Discuss the role of the practical nurse.

INTRODUCTION TO BASIC NURSING
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:
   - A. Provide students with objective sheet.
   - B. Provide students with information sheet.
   - C. Discuss terminal and specific objectives.
   - D. Discuss information sheet.
   - E. Give test.

II. Student:
   - A. Read objectives.
   - B. Study information sheet.
   - C. Participate in discussion.
   - D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
   - A. Objectives
   - B. Information sheet
   - C. Test
   - D. Answers to test

II. References:
   - A. *Course Outline, Practical Nursing I.* Raleigh, North Carolina: Division of Occupational Education, Practical Nurse Education, 1970.
   - B. Smith, Genevieve E. *A Teaching Plan for the Practical Nursing Curriculum.* New Brunswick, New Jersey: Rutgers University Curriculum Laboratory, 1973.
   - C. *Nursing Principles and Skills: Lesson Plans.* Nashville, Tennessee: Tennessee State Board for Vocational Education, 1972.

INTRODUCTION TO BASIC NURSING
UNIT I

INFORMATION SHEET

I. Objectives of this course of study

   A. To learn the responsibilities of the practical nurse in the management of the patient's environment

   B. To learn some principles underlying nursing skills

   C. To identify nursing needs of patients

   D. To learn beginning procedures of patient care

   E. To demonstrate beginning ability in preparing nursing care plans

   F. To identify factors that constitute a safe, convenient, comfortable patient environment

   G. To learn proper procedures for medical asepsis

   H. To develop fundamental nursing skills through classroom and laboratory instruction and practice

   I. To learn and practice skills in observing, reporting and recording signs and symptoms of patient needs and behavior

   J. To care for patients in simple nursing situations

   K. To practice proper body mechanics for patient and self

   L. To recognize a health crisis and seek assistance

II. Activities of nursing

   A. Provide such personal care as the patient needs

   B. Provide for the patient's individuality and privacy

   C. Assist in maintaining the physiological functions of the patient

   D. Protect the patient from further injury or disease

   E. Observe, report, and record accurately the care, treatment, and response of the patient

INFORMATION SHEET

F. Carry out physician's orders

G. Teach the patient aspects of self-care as determined by the physician and professional nurse

H. Assist patients in modifying past habits

I. Help patient to accept his illness

III. Role of the practical nurse

A. Detect lack of understanding on the part of the patient

B. Know what the patient has been told by the doctor or professional personnel

C. Help the patient to understand and carry out instructions

D. Refer all questions requiring a depth of knowledge to the professional nurse or physician

E. Practice good health habits

INTRODUCTION TO BASIC NURSING
UNIT I

TEST

1. List ten objectives of this course of study, *Basic Nursing Principles and Skills.*

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

   i.

   j.

2. List six activities of nursing.

   a.

   b.

   c.

   d.

   e.

   f.

3. Discuss the role of the practical nurse.

INTRODUCTION TO BASIC NURSING
UNIT I

ANSWERS TO TEST

1. Any ten of the following
   a. To learn the responsibilities of the practical nurse in the management of the patient's environment
   b. To learn some principles underlying nursing skills
   c. To identify nursing needs of patients
   d. To learn beginning procedures of patient care
   e. To demonstrate beginning ability in preparing nursing care plans
   f. To identify factors that constitute a safe, convenient, comfortable patient environment
   g. To learn proper procedures for medical asepsis
   h. To develop fundamental nursing skills through classroom and laboratory instruction and practice
   i. To learn and practice skills in observing, reporting, and recording signs and symptoms of patient needs and behavior
   j. To care for patients in simple nursing situations
   k. To practice proper body mechanics for patient and self
   l. To recognize a health crisis and seek assistance
2. Any six of the following
   a. Provide such personal care as the patient needs
   b. Provide for the patient's individuality and privacy
   c. Assist in maintaining the physiological functions of the patient
   d. Protect the patient from further injury or disease
   e. Observe, report, and record accurately the care, treatment, and response of the patient

f. Carry out physician's orders

g. Teach the patient aspects of self-care as determined by the physician and professional nurse

h. Assist patients in modifying past habits

i. Help patient to accept his illness

3. Discussion should include:

a. Detect lack of understanding on the part of the patient

b. Know what the patient has been told by the doctor or professional personnel

c. Help the patient to understand and carry out instructions

d. Refer all questions requiring a depth of knowledge to the professional nurse or physician

e. Practice good health habits

BODY MECHANICS
UNIT II

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list principles of and reasons for using proper body mechanics The student should be able to state principles of gravity that affect balance and describe proper posture in various positions. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with body mechanics to the correct definition.
2. List five reasons the nurse should use proper body mechanics.
3. State the three principles of gravity which affect balance.
4. List six principles of body mechanics.
5. Discuss using muscles effectively.
6. Describe proper body alignment when standing.
7. Describe proper body alignment when sitting.
8. Describe proper body alignment when walking.
9. Demonstrate correct posture.

BODY MECHANICS
UNIT II

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and job sheets.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information sheet.

  F. Demonstrate and discuss procedures outlined on the job sheet.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Demonstrate the ability to perform procedures outlined on the job sheet.

  E. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency masters

    1. TM 1--Base of Support: Anterior View

    2. TM 2--Base of Support: Lateral View

    3. TM 3--Alignment: Correct and Incorrect

4. TM 4--Posture: Standing

5. TM 5--Posture: Sitting

6. TM 6--Lifting Correctly and Incorrectly

D. Job Sheet #1--Proper Body Mechanics for the Student

E. Test

F. Answers to test

II. References:

A. Bilger, Annetta J. and Ellen H. Greene. *Winters' Protective Body Mechanics.* New York: Springer Publishing Company, 1973.

B. Kozier, Barbara B. and Beverly W. DuGas. *Fundamentals of Patient Care.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1967.

C. Leake, Mary J. *A Manual of Simple Nursing Procedures.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1967.

D. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

E. Woods, Lucile A. *Nursing Skills for Allied Health Services.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1972.

III. Additional materials:

A. Films

1. "Image in the Mirror." Oklahoma State Department of Health.

2. "Slips and Falls." Southwestern Bell Telephone System.

B. Filmstrip--"Lifting and Moving the Patient." Trainex Corporation.

BODY MECHANICS
UNIT II

INFORMATION SHEET

I. Terms and definitions

   A. Body mechanics--Coordination of body alignment, balance, and movement

   B. Agility--Ability to move quickly and easily

   C. Muscle tone--State of slight contraction present in a normal muscle

   D. Strain--Bodily injury from excessive tension, effort, or use

   E. Posture--Alignment and position of the body

   F. Fatigue--State of increased discomfort and decreased efficiency resulting from prolonged exertion

   G. Alignment--Relationship of the body segments to each other

   H. Flaccid--Lacking muscle tone

   I. Kinesiology--Study of muscles and muscular movement

   J. Center of gravity--Point or area in an object at which its weight or mass is centered

   K. Base of support--Contact of an object with the ground or other surface

   L. Line of gravity--Imaginary vertical line which passes through the center of gravity

II. Reasons for using proper body mechanics

   A. Saves energy by making work easier

   B. Prevents muscle strain

   C. Increases agility and efficiency

   D. Promotes good posture

   E. Improves health and appearance

   F. Preserves muscle tone and strength

   G. Sets an example for others, particularly patients

INFORMATION SHEET

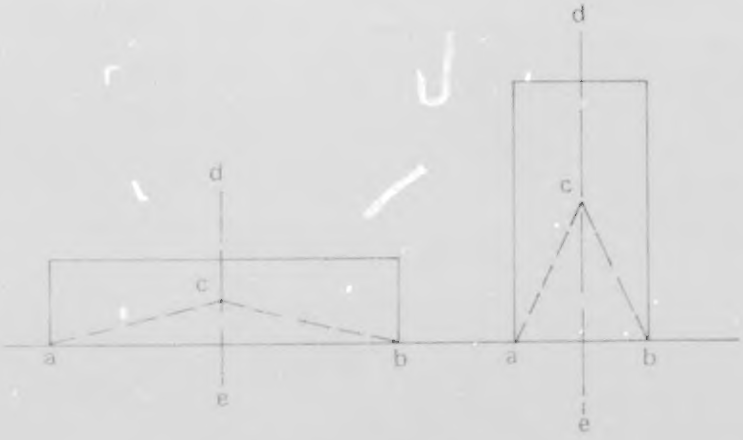
III. Principles of gravity which affect balance

A. Center of gravity--Balance is more stable when the center of gravity is low (c)

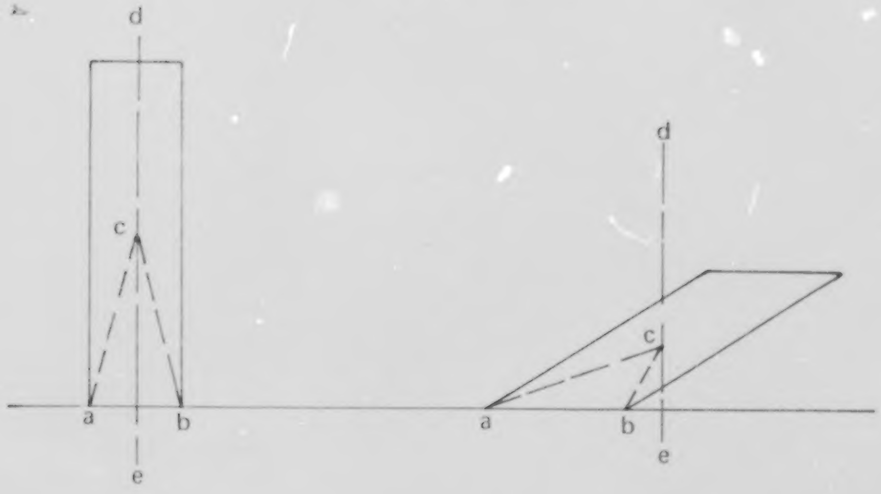
B. Base of support--Balance is more stable when the base of support is broad (a, b)

C. Line of gravity--Balance is more stable when the line of gravity passes through the base and near the center of the base (d, e)

(NOTE: The diagrams on this and the following page illustrate these three principles. The broader base, lower center of gravity, and central or nearly central line of gravity all increase stability of an object.)



INFORMATION SHEET



IV. Principles of body mechanics

A. Base of support is related to body balance (Transparencies 1 and 2)

(NOTE: Broadening the base of support by standing with the feet slightly apart provides better balance and more stability.)

B. Maintaining proper alignment of the body parts reduces strain and fatigue and makes balance easier (Transparencies 3 and 4)

(NOTE: Working in bent-over position and poor posture are two examples of improper alignment.)

C. Changes in position and type of activity help maintain muscle tone and lessen fatigue

D. Working or carrying weight close to the body requires less effort

(NOTE: Reaching toward work or carrying heavy objects away from the body causes muscle strain and fatigue.)

E. Proper body alignment while sitting reduces muscle strain and provides better circulation in legs and feet (Transparency 5)

F. Pulling, sliding, or rolling an object usually requires less effort than lifting it

G. Smooth surfaces create the least friction; therefore, it is easier to move a heavy object on a smooth surface

(NOTE: It is easier to move a patient on a smooth, well-made bed than in a wrinkled, messed-up bed.)

INFORMATION SHEET

H. Whenever possible, use mechanical devices in lifting and turning heavy or helpless patients

(NOTE: Hydraulic lifts may be used in moving patients from bed to wheelchair; an extra sheet under the patients' body may be used in moving the patient to the side or head of the bed or in turning him.)

I. Encourage the patient to help himself as much as possible

V. Using muscles effectively

A. Apply principles of good body mechanics whenever large or heavy objects are moved, lifted, or carried

B. Keep body in balance at all times

(NOTE: Avoid overextending muscles when reaching or lifting.)

C. Use stronger muscles as much as possible (Transparency 6)

(NOTE: A look at anatomy charts or models will show there are no strong muscles in the back; the stronger, larger muscles are found in the arms and legs. To avoid back strain use leg and arm muscles.)

D. When carrying heavy objects, distribute weight evenly

(NOTE: If possible, divide the weight carrying part in each hand instead of carrying all the weight on one side.)

E. Practice proper posture while sitting, standing, and walking until it becomes a habit

VI. Proper body alignment when standing (Transparencies 1, 2, and 4)

A. Base of support

1. Feet parallel, six to eight inches apart for lateral stability

2. One foot ahead of the other for anterior-posterior stability

3. Weight distributed equally on both feet

B. Knees slightly flexed

1. Serves as shock-absorber

2. Avoids strain caused by hyperextension

C. Buttocks tucked in

1. Tilts pelvis forward

2. Straightens lumbar curve

INFORMATION SHEET

- D. Abdomen in and up
  - 1. Supports abdominal organs
  - 2. Relieves strain on back muscles
- E. Rib cage raised
  - 1. Allows for increased expansion of lungs
  - 2. Reduces round shouldered appearance
- F. Head erect
  - 1. Balances head on top of spine
  - 2. Reduces neck hump by lessening curve of cervical-thoracic spine

VII. Proper body alignment when sitting (Transparency 5)

- A. Head and trunk erect
  - 1. Aids lung expansion
  - 2. Creates less pressure on internal organs
- B. Hips and knees flexed at right angles
  - 1. Permits correct joint position
  - 2. Helps keep spine erect
- C. Feet flat on floor--Helps maintain proper joint positon
- D. Chair correct height--Avoids pressure on backs of thighs which may hinder circulation

VIII. Proper body alignment when walking

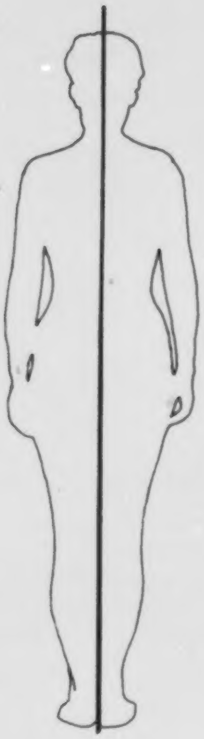
- A. Head and trunk erect
  - 1. Provides for lung movement necessary for increased respiratory needs during exercise
  - 2. Prevents twisting and straining of back muscles
- B. Toes pointed straight ahead
  - 1. Provides good base of support
  - 2. Avoids twisting leg muscles
  - 3. Provides proper joint movement

INFORMATION SHEET

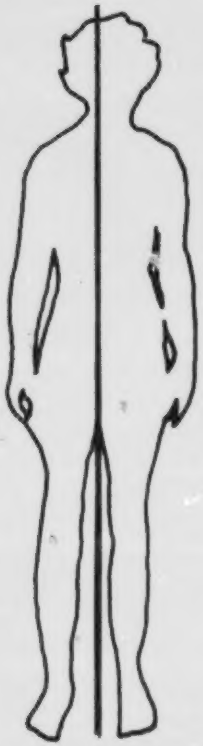
C. Arms at sides relaxed and swinging easily

  1. Provides additional momentum
  2. Assists in maintenance of balance

Base of Support
Anterior View



NARROW

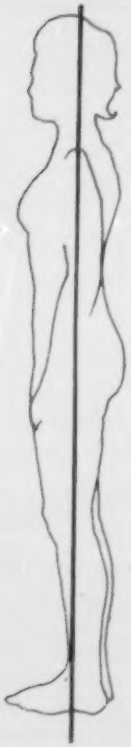


BROADER

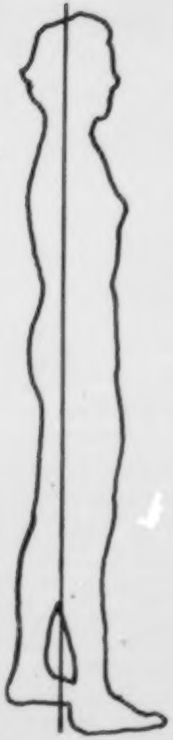
TM 1

N. I - 21-B

Base of Support
Lateral View



NARROW

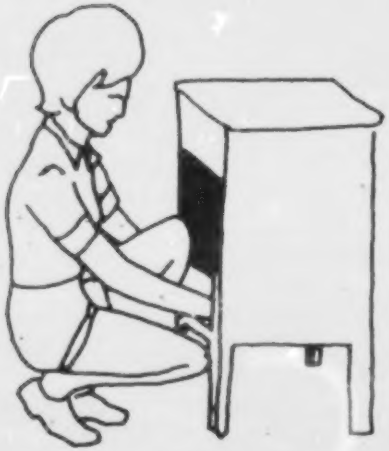


BROAD

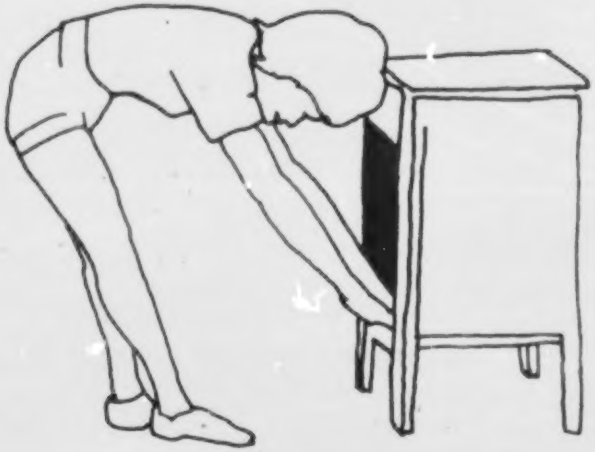
TM 2

N. I - 23-B

Alignment
Correct and Incorrect



CORRECT ALIGNMENT

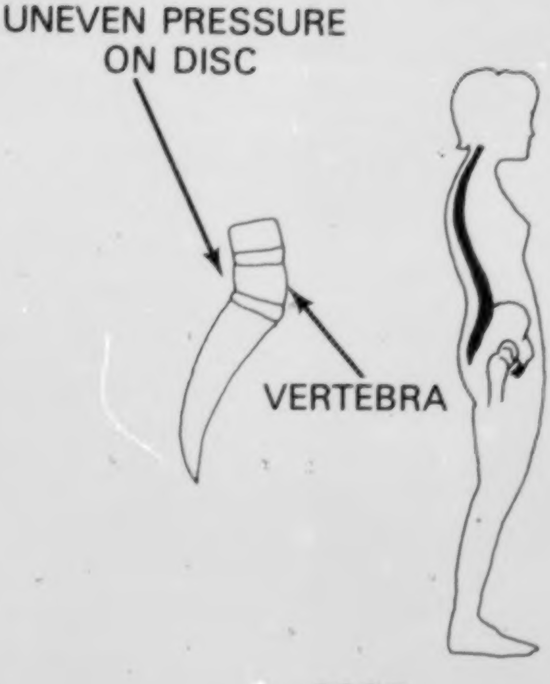


INCORRECT ALIGNMENT

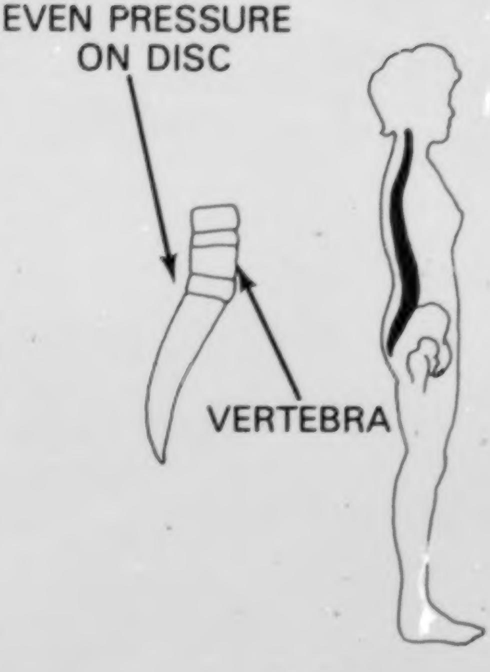
TM 3

N. I. - 25-B

Posture: Standing

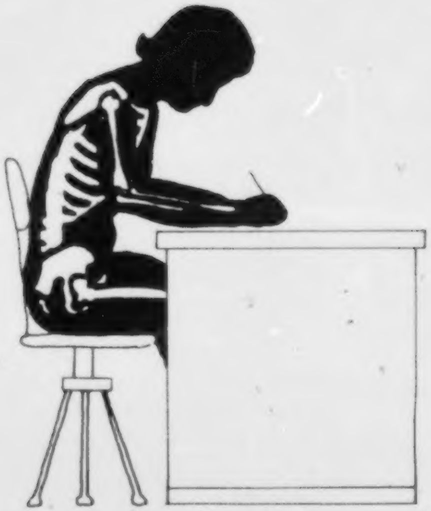

UNEVEN PRESSURE ON DISC
VERTEBRA

POOR

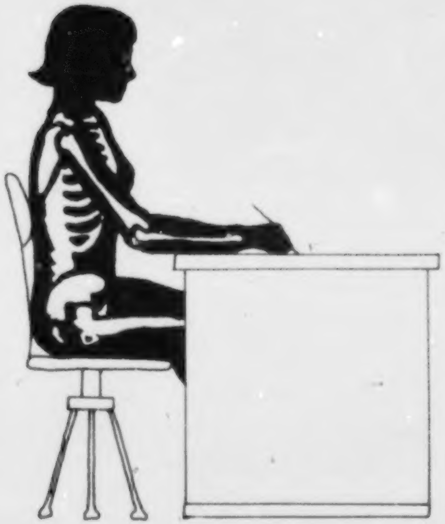

EVEN PRESSURE ON DISC
VERTEBRA

GOOD

Posture: Sitting



POOR

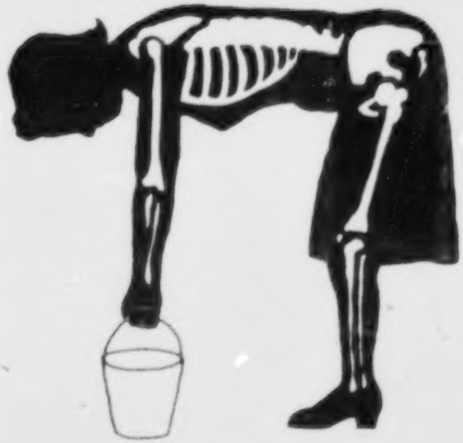


GOOD

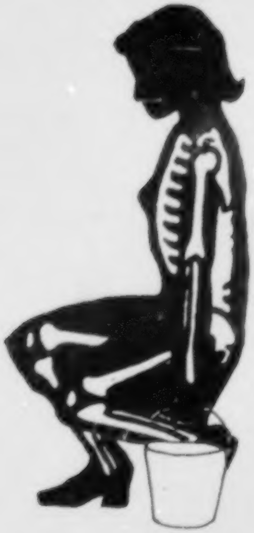
TM 5

N. I - 29-B

Lifting Correctly and Incorrectly



POOR



GOOD

N. I - 31-B

BODY MECHANICS
UNIT II

JOB SHEET #1–CORRECT POSTURE

I. Check standing posture

   A. Feet parallel, slightly apart with weight balanced evenly on heels, outside borders, and balls of the feet

   B. Knees straight and relaxed, neither flexed nor hyperextended

   C. Hips tucked in

   D. Abdomen flat

   E. Chest up

   F. Shoulders free and easy, neither forward nor backward

   G. Head centered over body with chin level

   H. Arms hanging relaxed at the sides

   I. Back straight, neither too curved nor too flat

   (NOTE: If student is unable to achieve good body alignment, exercises may be needed to strengthen certain muscle groups.)

II. Check walking gait

   A. Feet parallel, slightly apart with toes pointing straight ahead

   B. Foot rolls from heel to toe along the outer border

   C. As one leg advances the weight is gradually shifted forward

   D. Relaxed but erect posture is maintained with arms swinging easily in rhythm with the steps

   (NOTE: Maintaining good alignment of ankle and foot strengthens the muscles that support the foot and ankle making walking less tiring.)

III. Check sitting posture

   A. Stand close to the chair and when possible place one foot slightly under the chair

   B. As hips and knees are flexed, the trunk is inclined forward to distribute weight equally

   C. Body weight is lowered easily and smoothly by using leg muscles

JOB SHEET # 1

D. While sitting

1. Back is held erect
2. Weight falls on the tuberosities of the ischia with the segments of the spine directly above the ischia
3. Chair seat should be high enough to permit feet to rest flat on the floor but not high enough to cause pressure on the nerves and blood vessels on the under surface of the thighs

BODY MECHANICS
UNIT II

TEST

1. Match the terms on the right to the correct definition.

______a. Study of muscles and muscular movement

______b. Bodily injury from excessive tension, effort, or use

______c. Coordination of body alignment, balance, and movement

______d. Lacking muscle tone

______e. Ability to move quickly and easily

______f. Alignment and position of the body

______g. State of slight contraction present in a normal muscle

______h. State of increased discomfort and decreased efficiency resulting from prolonged exertion

______i. Relationship of the body segments to each other

______j. Point or area in an object at which its weight or mass is centered

______k. Imaginary vertical line which passes through the center of gravity

______l. Contact of an object with the ground or other surface

1. Center of gravity
2. Muscle tone
3. Kinesiology
4. Posture
5. Base of support
6. Body mechanics
7. Line of gravity
8. Flaccid
9. Strain
10. Fatigue
11. Agility
12. Alignment

2. List five reasons the nurse should use proper body mechanics.

a.

b.

c.

d.

e.

3. State the three principles of gravity which affect balance.

a.

b.

c.

4. List six principles of body mechanics.

a.

b.

c.

d.

e.

f.

5. Discuss using muscles effectively.

6. Describe proper body alignment when standing.

7. Describe proper body alignment when sitting.

8. Describe proper body alignment when walking.

9. Demonstrate correct posture.

   (NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

BODY MECHANICS
UNIT II

ANSWERS TO TEST

1. a. 3
   b. 9
   c. 6
   d. 8
   e. 11
   f. 4
   g. 2
   h. 10
   i. 12
   j. 1
   k. 7
   l. 5

2. Any five of the following
   a. Saves energy by making work easier
   b. Prevents muscle strain
   c. Increases agility and efficiency
   d. Promotes good posture
   e. Improves health and appearance
   f. Preserves muscle tone and strength
   g. Sets an example for others, particularly patients

3. a. Center of gravity--Balance is more stable when the center of gravity is low
   b. Base of support--Balance is more stable when the base of support is broad
   c. Line of gravity--Balance is more stable when the line of gravity passes through the base and near the center of the base

4. Any six of the following

   a. Base of support is related to body balance

   b. Maintaining proper alignment of the body parts reduces strain and fatigue and makes balance easier

   c. Changes in position and types of activity help maintain muscle tone and lessen fatigue

   d. Working or carrying weight close to the body requires less effort

   e. Proper body alignment while sitting reduces muscle strain and provides better circulation in legs and feet

   f. Pulling, sliding, or rolling an object usually requires less effort than lifting it

   g. Smooth surfaces create the least friction; therefore, it is easier to move a heavy object on a smooth surface

   h. Whenever possible, use mechanical devices in lifting and turning heavy or helpless patients

   i. Encourage the patient to help himself as much as possible

5. Discussion should include:

   a. Apply principles of good body mechanics whenever large or heavy objects are moved, lifted, or carried

   b. Keep body in balance at all times

   c. Use stronger muscles as much as possible

   d. When carrying heavy objects, distribute weight evenly

   e. Practice proper posture while sitting, standing, and walking until it becomes a habit

6. Description should include:

   a. Base of support

      1. Feet parallel, six to eight inches apart for lateral stability

      2. One foot ahead of the other for anterior-posterior stability

      3. Weight distributed equally on both feet

   b. Knees slightly flexed

      1. Serves as shock absorber

      2. Avoids strain caused by hyperextension

- c. Buttocks tucked in
    - 1. Tilts pelvis forward
    - 2. Straightens lumbar curve
- d. Abdomen in and up
    - 1. Supports abdominal organs
    - 2. Relieves strain on back muscles
- e. Rib cage raised
    - 1. Allows for increased expansion of lungs
    - 2. Reduces round shouldered appearance
- f. Head erect
    - 1. Balances head on top of spine.
    - 2. Reduces neck hump by lessening curve of cervical-thoracic spine

7. Description should include:
    - a. Head and trunk erect
        - 1. Aids lung expansion
        - 2. Creates less pressure on internal organs
    - b. Hips and knees flexed at right angles
        - 1. Permits correct joint position
        - 2. Helps keep spine erect
    - c. Feet flat on floor--Helps maintain proper joint position
    - d. Chair correct height--Avoids pressure on backs of thighs which may hinder circulation

8. Description should include:
    - a. Head and trunk erect
        - 1. Provides for lung movement necessary for increased respiratory needs during exercise
        - 2. Prevents twisting and straining of back muscles

b. Toes pointed straight ahead

    1. Provides good base of support

    2. Avoids twisting leg muscles

    3. Provides proper joint movement

c. Arms at sides relaxed and swinging easily

    1. Provides additional momentum

    2. Assists in maintenance of balance

THE PATIENT'S ENVIRONMENT
UNIT III

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list environmental factors, safety measures, and equipment needed in the daily care of patients. The student should be able to discuss maintaining cleanliness and orderliness in the patient's unit and the use of body mechanics in bedmaking. The student should be able to describe types of beds and bedmaking. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the patient's environment to the correct definition.
2. List six environmental factors related to the patient's well-being.
3. List ten safety measures that are nursing responsibilities.
4. List nine pieces of furniture and equipment ideally provided for each patient's unit.
5. Select from a list the linens, utensils, and personal care items which are usually provided by the hospital for each patient's unit.
6. Discuss cleanliness and orderliness in the daily care of the patient's unit.
7. Match types of beds which are usually found in hospitals to the correct description.
8. Describe four types of bedmaking.
9. List eight guidelines for making a closed or unoccupied bed.
10. Discuss the use of body mechanics in bedmaking.
11. Demonstrate the ability to:
    a. Make an unoccupied bed and an open bed.
    b. Set up a unit for a patient.

THE PATIENT'S ENVIRONMENT
UNIT III

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and job sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. In the classroom demonstrate how to operate a Gatch bed and an overbed table.

  F. In clinical area point out how various factors in the patient's environment are controlled and how an electric bed is controlled.

  G. Demonstrate and discuss procedures outlined in the job sheets.

  H. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Demonstrate the ability to accomplish procedures outlined in the job sheets.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

C. Job sheets

1. Job Sheet #1--Make an Unoccupied Bed and an Open Bed
2. Job Sheet #2--Set Up a Unit

D. Test

E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Leake, Mary J. *A Manual of Simple Nursing Procedures.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott, 1973.

D. Smith, Genevieve E. *A Teaching Plan for the Practical Nursing Curriculum.* New Brunswick, New Jersey: Rutgers University Curriculum Laboratory, 1973.

E. Wood, Lucile A. *Nursing Skills for the Allied Health Services.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1972.

III. Filmstrips:

A. "Safety in Housekeeping." Trainex Corporation.

B. "Patient Safety: From Thermometers to Wheelchairs." Trainex Corporation.

C. "How's Your Safety Profile." Trainex Corporation.

D. "Do the Sick No Harm." Trainex Corporation.

E. "They Called It Fireproof." National Film Board of Canada, 1251 Avenue of the Americas, New York, New York 10020.

THE PATIENT'S ENVIRONMENT
UNIT III

INFORMATION SHEET

I. Terms and definitions

   A. Environment--Surroundings, conditions, or influences which affect an individual

   B. Humidity--Degree of moisture in the air

   C. Privacy--State of being apart from company or observation

   D. Side rails or bedsides--Metal side attachments for hospital beds to protect and/or assist patients

   E. Patient's unit--Includes bed, bedside table, and other furnishings and equipment set aside for use by one patient

   F. Hazardous--Referring to anything which may cause injury or danger

   G. Emesis basin--Kidney-shaped metal or plastic utensil

   H. Bed cradle--Frame to keep bedclothes from touching all or part of the patient's body

   I. Bedpan--Shallow vessel used for defecation or urination by patients confined to bed

   J. Urinal--Receptacle for urination

   K. Drawsheet--Small sheet made of rubber, plastic, or heavy cotton

II. Environmental factors related to the patient's well-being

   A. Temperature

   B. Humidity

   C. Ventilation

   (NOTE: These first three environmental needs may be provided by indoor climate control.)

   D. Lighting

   E. Odor

   F. Noise

   G. Privacy

   H. Safety

INFORMATION SHEET

III. Safety measures

- A. Signal cord, call light, or other communication device must always be within patient's reach
- B. Appliances such as side rails, oxygen equipment, steam-producing devices, and other electrical or mechanical devices must be used safely and as directed
- C. All equipment in use should be in good condition

  (NOTE: Report needed repairs according to institutional policies.)
- D. Floor must be kept clear of hazardous materials such as spilled liquids, papers, and broken glass
- E. Bedside table should be within reach of the patient
- F. Hazardous objects such as safety pins, medicines, and instruments must be kept out of reach of persons not responsible for their actions
- G. Proper temperatures for enema solutions, bath water, wet dressings, feeding formulas, and other liquids must be observed
- H. Equipment not being used should be returned to storage
- I. Use equipment for purpose intended
- J. Provide adequate lighting for patient and nursing activities
- K. Footstools and chairs should be easily accessible to the patient
- L. Learn plan of action to be used in case of fire or disaster

IV. Equipment for the patient's unit

- A. Bed
- B. Bedside table
- C. Overbed or tray table
- D. Chair
- E. Footstool
- F. Waste receptacle
- G. Light
- H. Signal cord or call bell
- I. Screen

INFORMATION SHEET

V. Supplies for each unit

A. Linens

1. Mattress pad or cover
2. Sheets, two
3. Rubber or plastic drawsheet
4. Cotton drawsheet
5. Blanket
6. Spread
7. Pillowcase
8. Bath blanket
9. Bath towel
10. Hand towel
11. Washcloth
12. Bedgown
13. Pillows

B. Utensils

1. Washbasin
2. Emesis basin
3. Mouthwash cup
4. Soap dish
5. Bedpan
6. Urinal
7. Water container
8. Drinking utensil

INFORMATION SHEET

C. Personal care items

1. Soap
2. Toothpaste
3. Lotion
4. Mouth wipes
5. Paper bag for waste
6. Mouthwash
7. Denture cup

(NOTE: Equipment provided by health care facilities varies.)

VI. Daily care of the patient's unit

A. Cleanliness

1. Floors, furniture, utensils, and bathroom should be cleaned daily
2. Bedside and/or overbed table should be carefully cleaned since they are used for so many purposes
3. Washbasin, emesis basin, soap dish, mouthwash cup, and other equipment should be cleaned after each use and returned to proper place

B. Orderliness

1. Bedside and overbed tables should be placed for patient's comfort, safety, and convenience
2. Lighting, screens, and draperies should be arranged for the patient's convenience as much as possible
3. Unused articles should be removed, helping to keep unit neat and attractive

VII. Types of beds found in hospitals

A. Incubator--Closed crib with controlled environment used for newborn infants

B. Bassinet--Small crib usually with closed sides used for newborn and small infants

INFORMATION SHEET

C. Crib--Small bed with adjustable sides used for infants and young children

D. Gatch or hospital bed--One fitted with jointed springs which can be adjusted to various positions; used for older children and adults

E. High-low bed--Electrically or manually operated bed that can be raised or lowered to a desired height

F. Circle bed--One with a circular frame allowing the patient to be turned to any angle from flat-lying to the standing position; used for paralyzed patients or a patient who has been in bed for an extended length of time

G. Stryker or Foster frame--Apparatus constructed of metal frame and canvas to facilitate turning a patient while maintaining a stable position; used for patients with spinal cord injuries or paralysis

VIII. Types of bedmaking

A. Closed or unoccupied--Unassigned to a patient

B. Open--Top bedding turned back ready to receive a patient

C. Occupied--With patient in bed

(NOTE: Modifications of bedmaking may be required when special equipment is used.)

D. Postoperative--Variation of an open bed to receive a patient following surgery

(NOTE: It may also be called a surgical or anesthetic bed.)

IX. Guidelines for making a closed bed

A. Practice good body mechanics

B. Assemble linen needed and arrange in order of use

C. Place linen on nearby chair or bedside table to save steps and time

D. Lock wheels and place bed in a flat position; when possible, adjust to a comfortable working height

E. Unfold linen on bed to save energy

(NOTE: Most hospital linen is folded in half either lengthwise or crosswise and then folded again as necessary; placing center fold at approximate center of bed eliminates need to check linen for proper placement.)

INFORMATION SHEET

F. Avoid shaking or fanning linen by handling it as little as possible

G. Work from top to bottom of bed

H. Complete one side before going to other side

I. After bed is made, complete patient's unit as instructed

X. Body mechanics in bedmaking

A. Lifting requires energy to overcome gravity pull; therefore, folding or unfolding linens on the bed conserves energy

B. Muscles work in groups

1. Avoid excessive or unnecessary twisting which may cause muscle strain

2. Face in the direction of the work, moving along with the work to prevent twisting or over-reaching

C. Use longest and strongest muscles as much as possible

1. Separate feet slightly and flex knees when tucking linens under the mattress to reduce strain on the back

2. Use shoulder as well as arm muscles when pulling sheets tight

3. With one foot slightly ahead of the other, similar to a boxer's stance, use rocking motion to aid in pulling

THE PATIENT'S ENVIRONMENT
UNIT III

JOB SHEET #1--MAKE AN UNOCCUPIED BED AND AN OPEN BED

I. Equipment

- A. Bed pad or mattress cover
- B. Two large sheets

  (NOTE: Fitted bottom sheets are used in some institutions.)
- C. Waterproof drawsheet
- D. Cotton drawsheet
- E. Blanket, if needed
- F. Pillowcases
- G. Bedspread

II. Procedure for unoccupied or closed bed

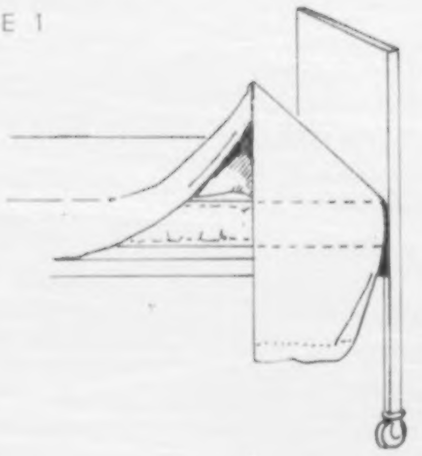
- A. Adjust bed to convenient level with bed flat
- B. Put mattress pad on the mattress
- C. Place bottom sheet on the bed
  1. With hem even with the foot of the mattress
  2. With middle of sheet near the center of the bed
  3. Allow enough to tuck under head of mattress so the sheet will remain tucked in place
- D. Tuck sheet smoothly under head of mattress

JOB SHEET #1

E. Make a mitered corner at head of mattress

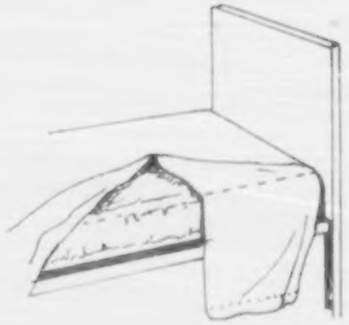
1. Pick up edge of sheet so that it forms a triangle with the side edge of the sheet held perpendicular to the mattress (Figure 1)

FIGURE 1



2. Lay folded corner on mattress (Figure 2)

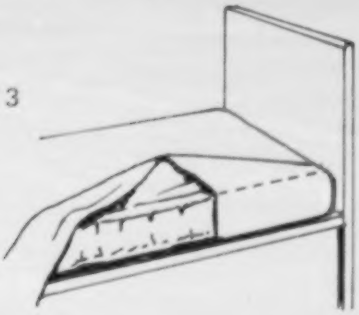
FIGURE 2



JOB SHEET #1

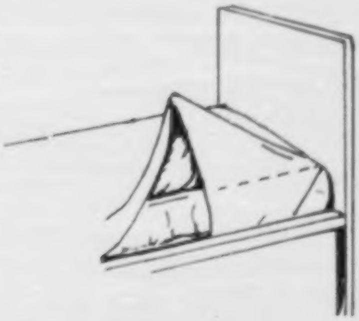
3. Tuck hanging part under mattress (Figure 3)

FIGURE 3



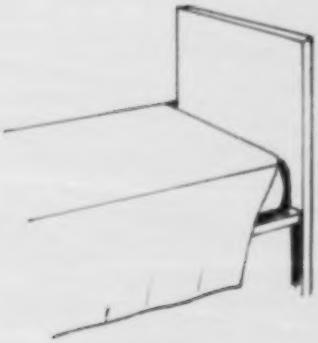
4. Hold sheet in place against mattress; with other hand, pick up corner of folded part from top of mattress (Figure 4)

FIGURE 4



5. Drop corner of sheet over side of mattress (Figure 5)

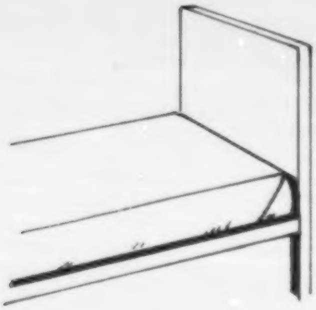
FIGURE 5



JOB SHEET #1

6. Tuck sheet under mattress along the side from head to foot (Figure 6)

FIGURE 6



F. Place center of rubber sheet at center of bed with upper edge about sixteen inches from head of mattress

G. Place cotton drawsheet over rubber sheet with cotton sheet extending over each side of rubber sheet

H. Tuck both drawsheets under mattress

I. Place and unfold top sheet, wrong side up and hem even with top edge of mattress (Figure 7)

FIGURE 7

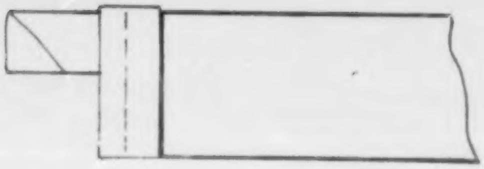
J. Place blanket on top of sheet with upper edge six inches from top edge of mattress (Figure 8)

FIGURE 8

JOB SHEET #1

K. Fold top of sheet down over top of blanket (Figure 9)

FIGURE 9



L. Place spread on bed even with top edge of mattress

M. Tuck top sheet, blanket, and spread under mattress at foot of bed; miter corner, allowing sides to hang down

N. Move to the other side of the bed to complete making the bed

O. Fold linen to center of bed

P. Tuck bottom sheet smoothly under head of mattress, mitering top corner; tuck under tightly along the side

Q. Grasp edge of rubber sheet, pulling it tight and tuck under mattress

R. Tuck cotton drawsheet under mattress in same manner

S. Straighten top sheet, blanket, and spread; move to foot of bed to tuck in top sheet, blanket, and spread

T. Miter corners together, letting sides hang free

U. Put case on pillow

V. Place pillow at head of bed with open end away from door

III. Procedure for open bed

A. Proceed as for closed bed, steps A through V

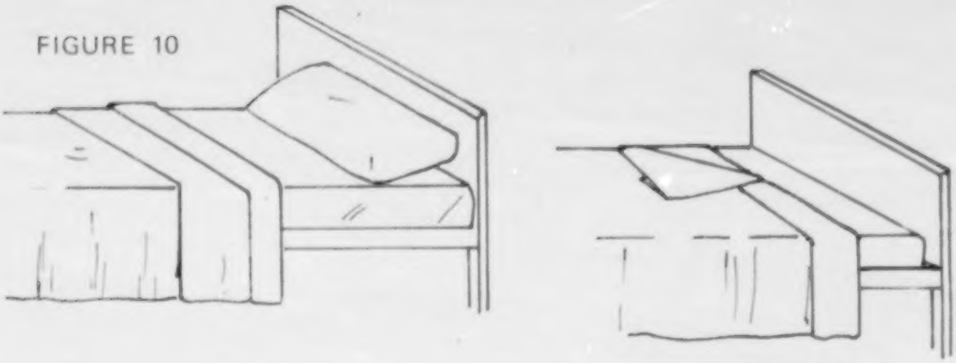
B. Fold top of bedspread over top edge of blanket

C. Fold top edge of sheet down over top edge of blanket and folded spread

JOB SHEET #1

D. Fanfold or piefold top covers toward the foot of the bed (Figure 10)

FIGURE 10



E. Place pillow at head of bed with open edge away from door

THE PATIENT'S ENVIRONMENT
UNIT III

JOB SHEET #2-SET UP A UNIT

I. Equipment

A. Closed bed

B. Overbed table

C. Chair

D. Footstool

E. Communication device

F. Other equipment as provided or required

G. Bedside table containing

1. Gown
2. Bath blanket
3. Bath towel
4. Hand towel
5. Washcloth
6. Washbasin
7. Soap in soap dish
8. Emesis basin
9. Bedpan
10. Urinal

H. Pitcher and glass

I. Tissues

II. Procedure

A. Make unoccupied bed if not already made

B. If patient is waiting to be admitted, make open bed

JOB SHEET #2

C. Check bedside table to see that equipment is complete

D. Arrange unit attractively

E. When patient is to be admitted, provide fresh drinking water and ice as permitted

THE PATIENT'S ENVIRONMENT
UNIT III

TEST

1. Match the terms on the right to the correct definition.

_____a. Referring to anything which may cause injury or danger

_____b. Metal side attachments for hospital beds to protect and/or assist patients

_____c. Degree of moisture in the air

_____d. Includes bed, bedside table, and other furnishings and equipment set aside for use by one patient

_____e. Kidney-shaped metal or plastic utensil

_____f. Shallow vessel used for defecation or urination by patients confined to bed

_____g. Surroundings, conditions, or influences which affect an individual

_____h. State of being apart from company or observation

_____i. Frame to keep bedclothes from touching all or part of the patient's body

_____j. Receptacle for urination

_____k. Small sheet made of rubber, plastic, or heavy cotton

1. Bedpan
2. Urinal
3. Emesis basin
4. Hazardous
5. Humidity
6. Privacy
7. Patient's unit
8. Side rails or bedsides
9. Drawsheet
10. Environment
11. Bed cradle

2. List six environmental factors related to the patient's well-being.

a.

b.

c.

d.

e.

f.

3. List ten safety measures that are nursing responsibilities.

a.

b.

c.

d.

e.

f.

g.

h.

i.

j.

4. List nine pieces of furniture and equipment ideally provided for each patient's unit.

a.

b.

c.

d.

e.

f.

g.

h.

i.

5. Select from the list below the linens, utensils, and personal care items which are usually provided by the hospital for each patient's unit. Mark the correct selections with an "X".

_____a. Bedgown

_____b. Spread

_____c. Soap

_____d. Radio

_____e. Blanket

_____f. Mouth wipes

_____g. Heating pad

_____h. Washcloth

_____i. Emesis basin

_____j. Stationery

_____k. Bath blanket

_____l. Urinal

_____m. After shave lotion

_____n. Daily newspaper

_____o. Hand towel

_____p. Mattress pad or cover

_____q. Washbasin

_____r. Face powder

_____s. Aspirin

_____t. Two sheets

_____u. Soap dish

_____v. Electric blanket

_____w. Pillowcase

_____x. Toothpaste

_____y. Deodorant

_____z. Enema tray

____aa. Shaving cream

____bb. Rubber or plastic drawsheet

____cc. Lipstick

____dd. Bedpan

6. Discuss cleanliness and orderliness in the daily care of the patient's unit.

7. Match types of beds which are usually found in hospitals to the correct description.

_____a. One fitted with jointed springs which can be adjusted to various positions; used for older children and adults

_____b. Small crib usually with closed sides used for newborn and small infants

_____c. Small bed with adjustable sides used for infants and young children

_____d. Closed crib with controlled environment used for newborn infants

_____e. One with a circular frame allowing the patient to be turned to any angle from flat-lying to the standing position; used for paralyzed patients or a patient who has been in bed for an extended length of time

_____f. Electrically or manually operated bed that can be raised or lowered to a desired height

_____g. Apparatus constructed of metal frame and canvas to facilitate turning a patient while maintaining a stable position; used for patients with spinal cord injuries or paralysis

1. Crib
2. Circle bed
3. Gatch or hospital bed
4. Incubator
5. Stryker or Foster frame
6. Bassinet
7. High-low bed

8. Describe four types of bedmaking.

a.

b.

c.

d.

9. List eight guidelines for making a closed or unoccupied bed.
   a.
   b.
   c.
   d.
   e.
   f.
   g.
   h.

10. Discuss the use of body mechanics in bedmaking.

11. Demonstrate the ability to:
    a. Make an unoccupied bed and an open bed.
    b. Set up a unit for a patient.

    (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

THE PATIENT'S ENVIRONMENT
UNIT III

ANSWERS TO TEST

1. a. 4
   b. 8
   c. 5
   d. 7
   e. 3
   f. 1
   g. 10
   h. 6
   i. 11
   j. 2
   k. 9

2. Any six of the following

   a. Temperature

   b. Humidity

   c. Ventilation

   d. Lighting

   e. Odor

   f. Noise

   g. Privacy

   h. Safety

3. Any ten of the following

   a. Signal cord, call light, or other communication device must always be within patient's reach

   b. Appliances such as side rails, oxygen equipment, steam-producing devices, and other electrical or mechanical devices must be used safely and as directed

   c. All equipment in use should be in good condition

   d. Floor must be kept clear of hazardous materials such as spilled liquids, papers, and broken glass

   e. Bedside table should be within reach of the patient

   f. Hazardous objects such as safety pins, medicines, and instruments must be kept out of reach of persons not responsible for their actions

g. Proper temperatures for enema solutions, bath water, wet dressings, feeding formulas, and other liquids must be observed

h. Equipment not being used should be returned to storage

i. Use equipment for purpose intended

j. Provide adequate lighting for patient and nursing activities

k. Footstools and chairs should be easily accessible to the patient

l. Learn plan of action to be used in case of fire or disaster

4. a. Bed

b. Bedside table

c. Overbed or tray table

d. Chair

e. Footstool

f. Waste receptacle

g. Light

h. Signal cord or call bell

i. Screen

5. a, b, c, e, f, h, i, k, l, o, p, q, t, u, w, x, bb, dd

6. Discussion should include:

a. Cleanliness

1) Floors, furniture, utensils, and bathroom should be cleaned daily

2) Bedside and/or overbed table should be carefully cleaned since they are used for so many purposes

3) Washbasin, emesis basin, soap dish, mouthwash cup, and other equipment should be cleaned after each use and returned to proper place

b. Orderliness

1) Bedside and overbed tables should be placed for patient's comfort, safety, and convenience

2) Lighting, screens, and draperies should be arranged for the patient's convenience as much as possible

3) Unused articles should be removed, helping to keep unit neat and attractive

7. a. 3

   b. 6

   c. 1

   d. 4

   e. 2

   f. 7

   g. 5

8. a. Closed or unoccupied--Unassigned to a patient

   b. Open--Top bedding turned back ready to receive a patient

   c. Occupied--With patient in bed

   d. Postoperative--Variation of an open bed to receive a patient following surgery

9. Any eight of the following

   a. Practice good body mechanics

   b. Assemble linen needed and arrange in order of use

   c. Place linen on nearby chair or bedside table to save steps and time

   d. Lock wheels and place bed in a flat position; when possible, adjust to a comfortable working height

   e. Unfold linen on bed to save energy

   f. Avoid shaking or fanning linen by handling it as little as possible

   g. Work from top to bottom of bed

   h. Complete one side before going to other side

   i. After bed is made, complete patient's unit as instructed

10. Discussion should include:

    a. Lifting requires energy to overcome gravity pull; therefore, folding or unfolding linens on the bed conserves energy

    b. Muscles work in groups

        1) Avoid excessive or unnecessary twisting which may cause muscle strain

        2) Face in the direction of the work, moving along with the work to prevent twisting or over-reaching

    c. Use longest and strongest muscles as much as possible

        1) Separate feet slightly and flex knees when tucking linens under the mattress to reduce strain on the back

        2) Use shoulder as well as arm muscles when pulling sheets tight

        3) With one foot slightly ahead of the other, similar to a boxer's stance, use rocking motion to aid in pulling

11. Performance skills will be evaluated to the satisfaction of the instructor.

MEDICAL ASEPSIS
UNIT IV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list methods of transmission of organisms, types of medical asepsis, and rules for caring for equipment. The student should be able to discuss medical aseptic technique, importance of handwashing, and cleaning of a patient's unit. The student should be able to demonstrate proper handwashing and cleaning a patient's unit. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with medical asepsis to the correct definition.
2. List six ways organisms are spread.
3. Describe the three types of medical asepsis.
4. Discuss medical aseptic technique.
5. Discuss the importance of handwashing.
6. List five rules for aseptic care of equipment.
7. Describe concurrent and terminal cleaning of the patient's unit.
8. Demonstrate proper handwashing technique.
9. Demonstrate cleaning a patient's unit.

MEDICAL ASEPSIS
UNIT IV

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Make transparency.

   D. Discuss terminal and specific objectives.

   E. Discuss information sheet.

   F. Discuss institutional policies for disposal of contaminated articles.

   G. Demonstrate and discuss the procedures outlined on the job sheets.

   H. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to accomplish the procedures outlined on the job sheets.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency master: TM 1--Ways Organisms Are Spread

   D. Job sheets

      1. Job Sheet #1--Wash Hands

      2. Job Sheet #2--Clean a Unit

E. Test

F. Answers to test

II. References:

A. Hornemann, Grace V. *Basic Nursing Procedures.* Albany, New York: Delmar Publishers, 1972.

B. Johnston, Dorothy F. *Total Patient Care.* St. Louis, Missouri: The C. V. Mosby Company, 1972.

C. Leake, Mary J. *A Manual of Simple Nursing Procedures.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1967.

D. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

E. Wood, Lucile A. *Nursing Skills for Allied Health Services,* Volume One. Philadelphia, Pennsylvania: W. B. Saunders Company, 1972.

III. Additional materials:

A. Films

1. "Handwashing in Patient Care." Oklahoma State Department of Health.

2. "Nurse Combats Disease." Oklahoma State Department of Health.

3. *"Hospital Sepsis." American Journal of Nursing.

B. Filmstrips

1. "Medical Asepsis." Trainex Corporation.

2. "Safety For All Hands." Glenn Educational Films.

*Also available from State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1515 West Sixth Avenue, Stillwater, Oklahoma 74074.

MEDICAL ASEPSIS
UNIT IV

INFORMATION SHEET

I. Terms and definitions

A. Asepsis--Absence of microorganisms which cause infections

B. Carrier--Person who harbors a specific pathogen without any symptoms, but who is potentially capable of spreading the organism to others

C. Clean--Uncontaminated; relatively free of pathogens

D. Contact--Association between persons or objects; exposure to pathogenic organisms

E. Contagious--Communicable; readily transmitted from one person to another, directly or indirectly

F. Direct contact--Transmission of an infection from one person to another

G. Indirect contact--Transmission of a contagious disease by some medium other than direct touch of the infected person

H. Contaminate--To make unsterile or unclean by direct contact or exposure

I. Disinfection--Freeing from pathogens by physical or chemical means

J. infection--Invasion of the body by microorganisms

K. Cross-infection--One transmitted between patients infected with different pathogens

L. Isolation--Limiting movement and social contacts of a carrier or a person with an infection or communicable disease

M. Quarantine--Limiting social contacts and movements of persons exposed to or having a communicable disease

N. Sterile--Free from living microorganisms

O. Sepsis--Presence of pathogens or toxins in the blood or tissues

P. Furuncle--Infected area known as a boil

Q. Concurrent disinfection--Daily care of all contaminated equipment and utensils

R. Terminal disinfection--Care of utensils and equipment when patient has been dismissed or transferred from a unit

INFORMATION SHEET

II. Ways organisms are spread (Transparency 1)

- A. From equipment to patient
- B. From equipment to worker
- C. From patient to patient
- D. From patient to worker
- E. From worker to patient
- F. From worker to worker

III. Types of medical asepsis

- A. In all general nursing care; aseptic technique
- B. In the unit of a patient with an infection or a contagious disease; isolation technique
- C. In the unit of a patient with very low resistance or one with large open wounds or lesions; reverse or protective isolation technique

IV. Medical aseptic technique

- A. Wash hands before, during, and after caring for patient
- B. Keep nails short and clean
- C. Keep hands free of cuts and abrasions
- D. Remove and handle linens to keep soiled portions to the inside, avoiding contact with clothing and clean articles
- E. Dispose of soiled dressings, discharges, and body wastes promptly and safely
- F. Keep patient's unit and utensils clean
- G. Clean equipment thoroughly after use
- H. Care promptly for infected areas such as acne and furuncles

V. Handwashing

- A. One of the simplest but most effective techniques to prevent spread of infection
- B. All patients are possible sources of infection
- C. Hands may carry disease-producing organisms to the nurse, other patients, coworkers, her family, and the public

INFORMATION SHEET

D. Effective handwashing depends upon the individual nurse

E. Constant care is necessary to prevent spread of infection

VI. Aseptic care of equipment and supplies

A. Disposable articles must be discarded in a safe manner

B. Washable articles must be thoroughly cleaned and disinfected before use by another patient

C. Metal instruments must be scrubbed and sterilized or disinfected between uses

D. Rubber goods which are not disposable must be disinfected and dried before storing

E. Sterile equipment must be stored properly to avoid contamination

F. Use equipment carefully and safely to avoid waste and contamination

VII. Cleaning the patient's unit

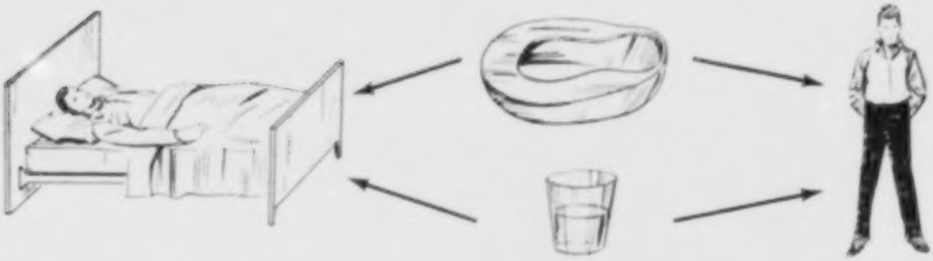
A. Concurrent

1. Place all soiled linens in receptacle provided for them
2. Discard all disposable articles and soiled paper products
3. Clean utensils and return to patient's bedside or storage area
4. Clean bedside table, bed, and other furniture daily as directed for type of equipment

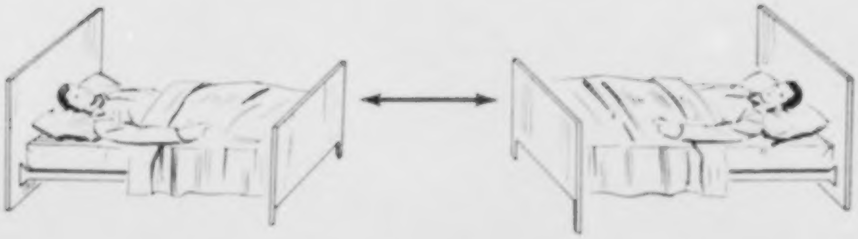
B. Terminal

1. Discard all contaminated articles as directed
2. After cleaning and disinfecting utensils, return them to cleaned unit or storage
3. Wash or disinfect unit as directed
4. Prepare unit for next patient

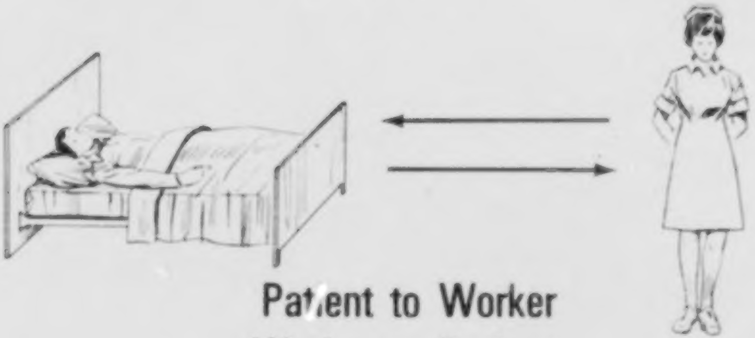
Ways Organisms Are Spread



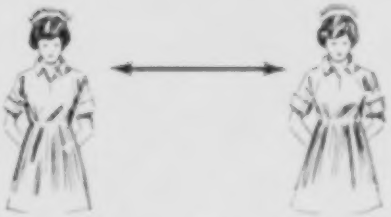
Hospital Equipment to Patient or Worker



Patient to Patient



Patient to Worker
Worker to Patient



Worker to Worker

MEDICAL ASEPSIS
UNIT IV

JOB SHEET #1--WASH HANDS

I. Equipment needed

   A. Soap

   B. Paper towels

   C. Running water

   D. Hand brush

   E. Waste receptacle

II. Procedure

   A. Turn on water regulating temperature

      1. When using foot controlled faucets, turn water on when needed

      2. When hand controlled faucets are available, leave water running throughout the procedure

   B. Apply detergent or soap to cover entire area of hands and wrists

   C. Add water as necessary to keep lather moist

   D. Continue washing hands for thirty seconds to two minutes

   E. Use hand brush and clean nails if needed

   F. Rinse hands thoroughly with water flow directed from the wrists down to the fingers

   G. Dry hands well

   H. Turn off faucet with paper towel if hand controlled

   I. Discard towel

   J. Apply lotion to hands as necessary

MEDICAL ASEPSIS
UNIT IV

JOB SHEET #2-CLEAN A UNIT

I. Equipment needed

- A. Receptacle for soiled linen
- B. Basin with disinfectant solution
- C. Cleaning cloths
- D. Clean linen
- E. Newspaper

II. Procedure

- A. Check unit for articles left by patient

  (NOTE: Any articles found must be turned in to the person in charge.)

- B. Remove each piece of linen separately and check for any misplaced articles

  (CAUTION: Do not shake linens; this spreads dust and germs. When carrying soiled linens, hold them away from uniform.)

- C. Place linens in receptacle for soiled linen
- D. Take bedside utensils to utility room for cleaning
- E. Place basin with disinfectant solution on bedside table
- F. Move mattress crosswise to the foot of the bed
- G. Wash and dry top and sides of mattress
- H. Raise headrest
- I. Wash and dry all exposed parts of bed
- J. Lower headrest
- K. Turn mattress, clean side down, onto upper half of bed
- L. Wash and dry other side of mattress
- M. Place rubber sheet on springs

JOB SHEET #2

N. Wash and dry one side of rubber sheet

O. Place rubber sheet on mattress, clean side down

P. Wash and dry other side of rubber sheet

Q. Raise foot of bed

R. Wash and dry all exposed parts

S. Wash and dry bedside table and other furniture

T. Put cleaning equipment on a newspaper on the floor

U. Wash and dry top of bedside table

V. Return cleaning equipment to utility room and care for it properly

W. Place cleaned bedside utensils in patient's unit

X. Make closed bed

(NOTE: Follow institutional procedure for care of pillows and blankets.)

MEDICAL ASEPSIS
UNIT IV

TEST

1. Match the terms on the right to the correct definition. (Answers to "a" through "j" are on this page.)

_____a. Absence of microorganisms which cause infections

_____b. Limiting movement and social contacts of a carrier or a person with an infection or communicable disease

_____c. Care of utensils and equipment when patient has been dismissed or transferred from a unit

_____d. Limiting social contacts and movements of persons exposed to or having a communicable disease

_____e. Person who harbors a specific pathogen without any symptoms, but who is potentially capable of spreading the organism to others

_____f. Free from living microorganisms

_____g. Freeing from pathogens by physical or chemical means

_____h. Association between persons or objects; exposure to pathogenic organisms

_____i. Transmission of an infection from one person to another

_____j. Uncontaminated; relatively free of pathogens

1. Terminal disinfection
2. Contact
3. Disinfection
4. Isolation
5. Carrier
6. Clean
7. Asepsis
8. Quarantine
9. Sterile
10. Direct contact

(NOTE: Answers for "k" through "q" are on this page.)

_____k. Communicable; readily transmitted from one person to another, directly or indirectly

_____l. Transmission of a contagious disease by some medium other than direct touch of the infected person

_____m. To make unsterile or unclean by direct contact or exposure

_____n. Invasion of the body by microorganisms

_____o. Presence of pathogens or toxins in the blood or tissues

_____p. Daily care of all contaminated equipment and utensils

_____q. One transmitted between patients infected with different pathogens

_____r. Infected area known as a bo..

11. Infection
12. Cross infection
13. Contagious
14. Concurrent disinfection
15. Furuncle
16. Indirect contact
17. Sepsis
18. Contaminate

2. List six ways organisms are spread.

a.

b.

c.

d.

e.

f.

3. Describe the three types of medical asepsis.

a.

b.

c.

4. Discuss medical aseptic technique.

5. Discuss the importance of handwashing.

6. List five rules for aseptic care of equipment.

   a.

   b.

   c.

   d.

   e.

7. Describe concurrent and terminal cleaning of the patient's unit.

   a. Concurrent

   b. Terminal

8. Demonstrate proper handwashing technique.

9. Demonstrate cleaning a patient's unit.

   (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

MEDICAL ASEPSIS
UNIT IV

ANSWERS TO TEST

1. a. 7
   b. 4
   c. 1
   d. 8
   e. 5
   f. 9
   g. 3
   h. 2
   i. 10
   j. 6
   k. 13
   l. 16
   m. 18
   n. 11
   o. 17
   p. 14
   q. 12
   r. 15

2. a. From equipment to patient
   b. From equipment to worker
   c. From patient to patient
   d. From patient to worker
   e. From worker to patient
   f. From worker to worker

3. a. In all general nursing care; aseptic technique
   b. In the unit of a patient with an infection or a contagious disease; isolation technique
   c. In the unit of a patient with very low resistance or one with large open wounds or lesions; reverse or protective isolation technique

4. Discussion should include:
   a. Wash hands before, during, and after caring for patient
   b. Keep nails short and clean
   c. Keep hands free of cuts and abrasions
   d. Remove and handle linens to keep soiled portions to the inside, avoiding contact with clothing and clean articles
   e. Dispose of soiled dressings, discharges, and body wastes promptly and safely
   f. Keep patient's unit and utensils clean

g. Clean equipment thoroughly after use

h. Care promptly for infected areas such as acne and furuncles

5. Discussion should include:

a. One of the simplest but most effective techniques to prevent spread of infection

b. All patients are possible sources of infection

c. Hands may carry disease-producing organisms to the nurse, other patients, coworkers, her family, and the public

d. Effective handwashing depends upon the individual nurse

e. Constant care is necessary to prevent spread of infection

6. Any five of the following

a. Disposable articles must be discarded in a safe manner

b. Washable articles must be thoroughly cleaned and disinfected before use by another patient

c. Metal instruments must be scrubbed and sterilized or disinfected between uses

d. Rubber goods which are not disposable must be disinfected and dried before storing

e. Sterile equipment must be stored properly to avoid contamination

f. Use equipment carefully and safely to avoid waste and contamination

7. a. Concurrent

1) Place all soiled linens in receptacle provided for them

2) Discard all disposable articles and soiled paper products

3) Clean utensils and return to patient's bedside or storage area

4) Clean bedside table, bed, and other furniture daily as directed for type of equipment

b. Terminal

1) Discard all contaminated articles as directed

2) After cleaning and disinfecting utensils, return them to cleaned unit or storage

    3) Wash or disinfect unit as directed
    4) Prepare unit for next patient

8. Performance skills will be evaluated to the satisfaction of the instructor.
9. Performance skills will be evaluated to the satisfaction of the instructor.

MAKING BEDS
UNIT V

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss the purposes and list guidelines of proper bedmaking. The student should be able to identify basic bed positions and demonstrate making an occupied bed and basic bed positioning. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definition.
2. Discuss the purposes in making the patient's bed properly.
3. List six guidelines for making an occupied bed.
4. List six accessory pieces of equipment that may be used on a patient's bed.
5. Label basic bed positions.
6. List three purposes of moving the mattress and/or patient to the head of the bed.
7. List four purposes of the postoperative bed.
8. Demonstrate the ability to:
   a. Make an occupied bed.
   b. Put the bed in positions specified by the instructor.
   c. Move the mattress and/or patient to the head of the bed.
   d. Make a postoperative bed.

MAKING BEDS
UNIT V

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and job sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. Demonstrate and discuss procedures outlined on the job sheets.

  F. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Demonstrate the ability to accomplish the procedures outlined on the job sheets.

  E. Take test.

'NSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Job sheets

    1. Job Sheet #1--Make an Occupied Bed

    2. Job Sheet #2--Position a Bed

    3. Job Sheet #3--Move Mattress and/or Patient to Head of Bed

    4. Job Sheet #4--Make a Postoperative Bed

D. Test

E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Leake, Mary J. *A Manual of Simple Nursing Procedures.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1967.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

D. Wood, Lucile A. *Nursing Skills for the Allied Health Services.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1972.

III. Filmstrips:

A. "Bedmaking: Occupied." Trainex Corporation.

B. "Lifting and Moving Patient." Trainex Corporation.

MAKING BEDS
UNIT V

INFORMATION SHEET

I. Terms and definitions

   A. Footdrop-Plantar flexion or turning down of the foot at the ankle due to weakness, injury, disease, or inactivity

   B. Footboard-One placed at the patient's feet to prevent a deformity called footdrop

   C. Bedboard-One placed under the mattress to provide firmer support

   D. Traction equipment-Devices attached to the bed to exert pull on a part of the body

   E. Emergency headboard-One which is detachable for use under a patient when emergency cardiopulmonary resuscitation is needed

   F. Sandbags-Sand-filled bags of various sizes used to keep a patient in a specified position

   G. Flex-To bend, as to flex a joint

II. Purposes in making the patient's bed properly

   A. Provides for the comfort and convenience of the patient

   B. Aids in protecting patient and nurse from injury

   C. Saves time needed for patient care

   D. Makes performance of other procedures easier

   E. Protects bed from bodily discharges

   F. Makes patient's unit more attractive

III. Guidelines for making an occupied bed

   A. Determine what linen is needed

   B. Assemble all needed linen and take to bedside

   (NOTE: Before removing and discarding any linen, be sure clean linen is available.)

   C. Arrange linen in the order it will be used and place it conveniently near the bed

INFORMATION SHEET

D. Tell patient what is to be done

E. Adjust bed, if possible, to convenient working height

F. Handle soiled linen with care to protect self, patient, and other patients

G. Develop a system for removing linen efficiently, easily, and safely

1. Straighten top bedding and loosen all bedding from mattress

2. Fold each piece separately, folding away from patient

3. Sort bedding as removed, checking carefully for misplaced articles

4. Place discarded linen in proper receptacle or stack it separately from clean linen until procedure is completed

5. Arrange reusable bedding in correct order for using on bed again

H. Adjust procedure as needed for patient's comfort and requirements

IV. Accessory equipment-Use of some of these pieces of equipment will alter the bed-making procedure

A. Cradle

B. Footboard or footrest

C. Bedboard

D. Emergency headboard

E. Traction equipment

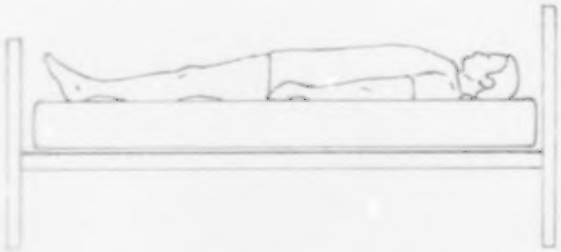
F. Sandbags

G. Rubber air rings or sponge rubber rings

H. Pillows

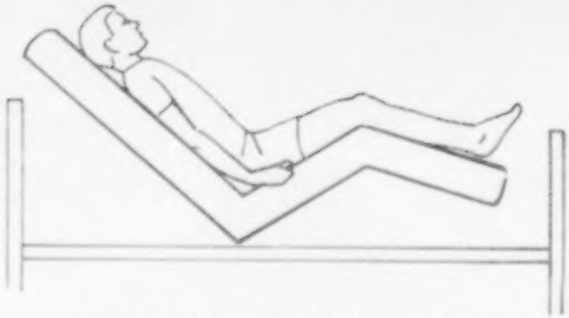
V. Bed positions

A. Flat-Bed level, with or without pillow under head

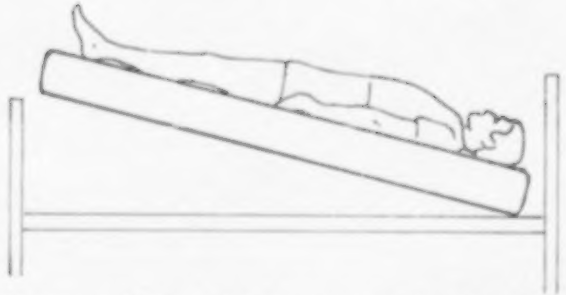


INFORMATION SHEET

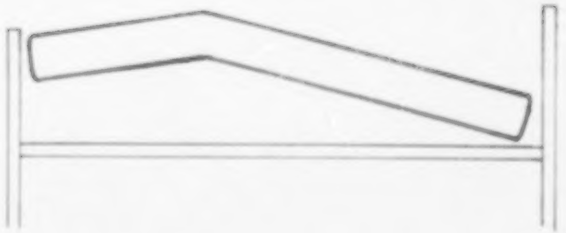
B. Fowler's-Backrest elevated to desired height; knee rest elevated unless contraindicated; position may be low, medium, or high Fowler's as ordered by physician



C. Trendelenberg-Mattress flat, foot of bed raised higher than head of bed



D. Modified Trendelenberg-Hips and knees higher than head with the legs below the knee on an inclined plane slanting downward



VI. Purposes of moving mattress and/or patient to head of bed

A. Promote comfort

B. Provide good body alignment

C. Position patient correctly for elevating head or knees

D. Prevent excessive pressure on sensitive areas due to incorrect positioning

INFORMATION SHEET

VII. Purposes of a postoperative bed

A. Provide comfort and safety for the postoperative patient

B. Provide additional warmth to maintain body heat of patient

C. Aid in protecting mattress and pillows from body discharges

D. Facilitate remaking parts of the bed as needed

E. Provide a bed in which the patient may be placed quickly without unnecessary loss of time and motion

MAKING BEDS
UNIT V

JOB SHEET #1-MAKE AN OCCUPIED BED

I. Equipment needed

A. Sheet

B. Drawsheet

C. Spread

D. Pillowcase

E. Bath blanket

F. Receptacle for soiled linen

II. Procedure

A. Wash hands

B. Select linen and take it to the patient's unit, placing it on a chair

C. Inform patient of procedure and provide privacy; adjust side rails if necessary

(NOTE: Use good body mechanics throughout procedure.)

D. Loosen top covers at the foot of the bed

E. Place bath blanket over the patient and the top covers

F. Have patient hold bath blanket or tuck it under his shoulders to keep it in place

G. Reach under the bath blanket and fanfold the top covers to the foot of the bed

H. Remove spread

(NOTE: If spread is to be used again, fold it with the hems together; then fold in half, edges together, and in half again. Hang over back of chair. If spread is not to be used, place it in linen receptacle.)

I. Remove blanket and fold in same manner as spread

J. Remove top sheet and fold for reuse in same manner as spread was folded

JOB SHEET # 1

K. Move mattress to head of bed

(NOTE: If patient is able, ask him to grasp the head of the bed to assist in moving mattress. If patient is unable to assist, request assistance from a fellow worker.)

L. Assist patient to turn to opposite side of bed, away from side to be made first; adjust side rails if necessary

M. Loosen linens on side to be made, folding or rolling each piece separately and as close to patient as possible

N. Straighten mattress pad

O. Put used top sheet on mattress with center fold near center of bed; tuck under mattress making mitered corner at top

P. Fanfold other half of sheet and tuck it as close to patient as possible

Q. Unfold rubber sheet, straighten, and pull tight; tuck under mattress

R. Unfold drawsheet, leaving it folded in half from top to bottom; place center fold near center of bed; tuck one side under mattress

S. Fanfold other half of drawsheet close to patient

T. Move patient to clean side of bed; adjust bath blanket to keep patient covered; adjust side rails if necessary

U. Move to other side of bed; remove soiled linen

V. Tuck in clean linen snugly and in proper sequence

W. Move patient to center of bed

X. Unfold top sheet over bath blanket

Y. Remove bath blanket, fold, and put away

Z. Place blanket and spread over patient

AA. Tuck linens in at foot of bed, making mitered corners as in unoccupied bed

BB. Loosen bed covers over patient's feet by grasping covers over toes and pulling them up gently

CC. Adjust side rails if necessary

DD. Position patient's communication device within his reach

EE. Remove soiled linen

MAKING BEDS
UNIT V

JOB SHEET #2--POSITION A BED

I. Equipment needed--Hospital bed

II. Procedure

A. Semi-Fowler's position

1. Using gatch handle, elevate head of bed to forty-five degree angle or as prescribed by physician

2. Using gatch handle, elevate knee rest of bed as prescribed

B. Trendelenberg position--Elevate foot of bed by extending legs or by placing foot of bed on blocks or a chair

C. Modified Trendelenberg

1. Lift springs and mattress at foot of bed to desired height; secure catch tightly

2. Using gatch handle, adjust knee rest at comfortable angle

MAKING BEDS
UNIT V

JOB SHEET # 3-MOVE MATTRESS AND/OR PATIENT TO HEAD OF BED

When lifting or moving patients, it is essential to use good body mechanics. Use longest and strongest muscles. If help is needed, obtain it before attempting to move the patient. Before moving patient and/or mattress to the head of the bed, place mattress in flat position and lock the wheels of the bed.

I. To move mattress and patient to head of bed with patient assistance

  A. Ask patient to grasp the side rails or the head of the bed

  B. While patient is pulling toward head of bed, push at foot of mattress

II. To move mattress and patient without patient assistance requiring two nursing personnel

  A. One person stands on each side of the mattress

  B. Grasp each side of mattress firmly and on count of three move mattress to head of bed

III. To move patient to head of bed with patient assistance

  A. Ask patient to grasp the side rails or the head of the bed

  B. Nurse slides one arm under lower curve of patient's back and other arm under thighs

  C. While patient pulls, nurse lifts and slides patient to head of bed

IV. To move patient without patient assistance requiring two persons

  A. One person stands near the patient's head, placing one arm under patient's neck and shoulders and one arm under middle of patient's back

  B. Second person places arm under patient's back and other arm under patient's thighs

  C. At prearranged signal, both persons move the patient toward head of bed

MAKING BEDS
UNIT V

JOB SHEET #4 MAKE A POSTOPERATIVE BED

I. Equipment needed

A. Clean linen as for an unoccupied bed

B. Waterproof and cotton drawsheets or other bed protector

C. Waterproof pillowcase

D. Bath blanket

E. For bedside table

a. Two emesis basins

b. Tongue depressors

c. Mouth wipes

d. Writing pad and pencil

e. Receptacle for soiled wipes

f. Stethoscope

g. Sphygmomanometer

h. IV standard

II. Procedure

A. Strip bed and turn mattress if indicated

B. Put on bottom sheet, waterproof drawsheet, and cotton drawsheet in usual manner

C. Place second waterproof drawsheet and cotton drawsheet or other bed protector across upper part of mattress so it overlaps first drawsheet if indicated

D. Place top sheet, blanket, and spread on the bed in the usual way except do not tuck them in at the foot

E. Make the cuff of the top bedding in the usual way

F. Fold back top bedding at the foot even with the mattress

JOB SHEET #4

G. On the side of the bed where the stretcher can be placed most conveniently, fold back top bedding even with the mattress and fanfold to opposite side of bed

H. Place plastic pillowcase and cotton pillowcase on pillow

I. Stand pillow on its side at the head of the bed

J. Take everything, including water glass and pitcher, off the bedside table

K. Arrange emesis basin, tongue depressors, mouth wipes, paper, and pencil conveniently

L. Place waste receptacle and IV standard near bedside

M. Clear pathway for stretcher

MAKING BEDS
UNIT V

TEST

1. Match the terms on the right to the correct definition.

_____a. Plantar flexion or turning down of the foot at the ankle due to weakness, injury, disease, or inactivity

_____b. To bend, as to flex a joint

_____c. Sand-filled bags of various sizes used to keep a patient in a specified position

_____d. One which is detachable for use under a patient when emergency cardiopulmonary resuscitation is needed

_____e. Devices attached to the bed to exert pull on a part of the body

_____f. One placed under the mattress to provide firmer support

_____g. One placed at the patient's feet to prevent a deformity called footdrop

1. Emergency headboard
2. Footboard
3. Bedboard
4. Footdrop
5. Flex
6. Traction equipment
7. Sandbags

2. Discuss the purposes in making the patient's bed properly.

3. List six guidelines for making an occupied bed.

a.

b.

c.

d.

e.

f.

4. List six accessory pieces of equipment that may be used on a patient's bed.

a.

b.

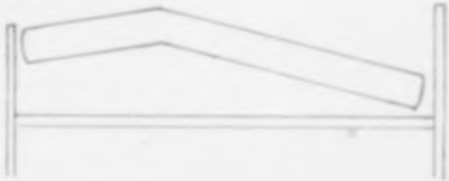
c.

d.

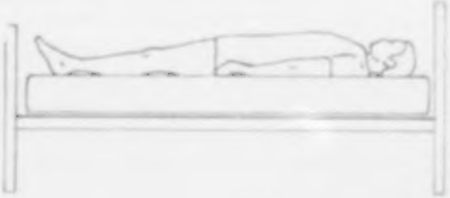
e.

f.

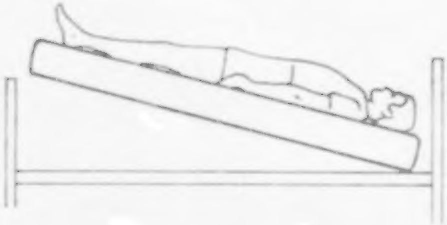
5. Label the following illustrations of bed positions by writing the correct name in the blanks provided.



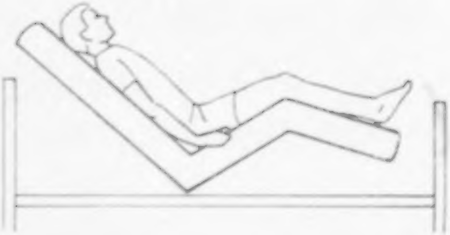
a. ____________________



b. ____________________



c. ______________________



d. ______________________

6. List three purposes of moving the mattress and/or patient to the head of the bed.

   a.

   b.

   c.

7. List four purposes of the postoperative bed.

   a.

   b.

   c.

   d.

8. Demonstrate the ability to:

   a. Make an occupied bed.

   b. Put the bed in positions specified by the instructor.

   c. Move the mattress and/or patient to the head of the bed.

d. Make a postoperative bed.

(NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

MAKING BEDS
UNIT V

ANSWERS TO TEST

1. a. 4 e. 6

   b. 5 f. 3

   c. 7 g. 2

   d. 1

2. Discussion should include:

   a. Provides for the comfort and convenience of the patient

   b. Aids in protecting patient and nurse from injury

   c. Saves time needed for patient care

   d. Makes performance of other procedures easier

   e. Protects bed from bodily discharges

   f. Makes patient's unit more attractive

3. Any six of the following

   a. Determine what linen is needed

   b. Assemble all needed linen and take to bedside

   c. Arrange linen in the order it will be used and place it conveniently near the bed

   d. Tell patient what is to be done

   e. Adjust bed, if possible, to convenient working height

   f. Handle soiled linen with care to protect self, patient, and other patients

   g. Develop a system for removing linen efficiently, easily, and safely

      1) Straighten top bedding and loosen all bedding from mattress

      2) Fold each piece separately, folding away from patient

      3) Sort bedding as removed, checking carefully for misplaced articles

4) Place discarded linen in proper receptacle or stack it separately from clean linen until procedure is completed

5) Arrange reusable bedding in correct order for using on bed again

h. Adjust procedure as needed for patient's comfort and requirements

4. Any six of the following

a. Cradle

b. Footboard or footrest

c. Bedboard

d. Emergency headboard

e. Traction equipment

f. Sandbags

g. Rubber air rings or sponge rubber rings

h. Pillows

5. a. Modified Trendelenberg

b. Flat

c. Trendelenberg

d. Fowler's

6. Any three of the following

a. Promote comfort

b. Provide good body alignment

c. Position patient correctly for elevating head or knees

d. Prevent excessive pressure on sensitive areas due to incorrect positioning

7. Any four of the following

a. Provide comfort and safety for the postoperative patient

b. Provide additional warmth to maintain body heat of patient

c. Aid in protecting mattress and pillows from body discharges

d. Facilitate remaking parts of the bed as needed

   e. Provide a bed in which the patient may be placed quickly without unnecessary loss of time and motion

8. Performance skills will be evaluated by the instructor.

PATIENT CLEANLINESS
UNIT VI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list purposes of daily body care, types of baths, and procedures included in morning and evening care. The student should be able to demonstrate several patient care procedures without referring to the job sheets. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with patient's cleanliness to the correct definition.
2. List six purposes of daily body care.
3. List five types of baths.
4. List eight procedures included in morning care.
5. List five procedures included in evening care.
6. Demonstrate the ability to:
   a. Give a complete bed bath.
   b. Assist with or give a partial bath.
   c. Assist with a tub bath.
   d. Assist with a shower bath.
   e. Assist with mouth care.
   f. Give mouth care to a helpless or unconscious patient.
   g. Comb hair.
   h. Shampoo hair.
   i. Give a back rub.
   j. Shave a male patient.
   k. Give care to an incontinent patient.

PATIENT CLEANLINESS
UNIT VI

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objective sheet.
- B. Provide students with information and job sheets.
- C. Discuss terminal and specific objectives.
- D. Discuss information sheet.
- E. Demonstrate and discuss procedures outlined on the job sheets.
- F. Give test.

II. Students:

- A. Read objectives.
- B. Study information sheet.
- C. Participate in discussion.
- D. Demonstrate the ability to perform the procedures outlined on the job sheets.
- E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Job sheets
  1. Job Sheet #1-Give a Complete Bed Bath
  2. Job Sheet #2-Assist With or Give a Partial Bath
  3. Job Sheet #3-Assist With a Tub Bath
  4. Job Sheet #4-Assist With a Shower Bath

   5. Job Sheet #5--Assist With Mouth Care
   6. Job Sheet #6--Give Mouth Care to a Helpless or Unconscious Patient
   7. Job Sheet #7--Comb Hair
   8. Job Sheet #8--Shampoo Hair
   9. Job Sheet #9--Give a Back Rub
   10. Job Sheet #10--Shave a Male Patient
   11. Job Sheet #11--Give Care to an Incontinent Patient

  D. Test

  E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Rapier, Dorothy K., et. al. *Practical Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1970.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott, 1973.

D. *Nurse Assistant.* Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, Stillwater, Oklahoma 74074

III. Filmstrips:

A. "Bed Bath." Trainex Corporation.

B. "Showers and Tub Baths." Trainex Corporation.

C. "Personal Care in Long Term Illness." Trainex Corporation.

D. "Oral Hygiene." Trainex Corporation.

PATIENT CLEANLINESS
UNIT VI

INFORMATION SHEET

I. Terms and definitions

   A. Ambulatory--Able to walk

   B. Anus--Opening of the rectum

   C. Axilla--Area under arm; armpit

   D. Buttocks--Prominence of gluteal muscles on the posterior part of the body at the hipline

   E. Contracture--Shortening or tightening of a muscle due to spasm, paralysis, or disease

   F. Decubitus ulcer--Lesion usually over a bony prominence due to local interference of circulation

   G. Denture--Complement of teeth, either natural or artificial; artificial replacement of one or more teeth, especially a set of false teeth

   H. Excoriation--Removal of areas of skin by trauma, scraping, or scratching

   I. Genitalia--Organs of the reproductive system, especially the external organs

   J. Incontinence--Inability to retain urine or feces through loss of sphincter control

   K. Sitz tub--One in which the patient sits immersing only the hips and buttocks

   L. Sphincter--Circular muscle surrounding and closing an opening

   M. Tepid--Moderately warm or lukewarm

   N. Trauma--Wound or injury, especially that caused by external force

   O. Umbilicus--Small depression on the abdomen marking the former attachment of the umbilical cord to the fetus

II. Purposes of daily body care

   A. Cleanse, refresh, and soothe the patient

   B. Stimulate circulation

   C. Improve elimination

INFORMATION SHEET

D. Relax muscles

E. Prevent contractures with planned exercises

F. Observe patient's physical and mental status

G. Relieve restlessness

H. Observe patient's skin for pressure areas, bruises, excoriations, rashes, or other lesions

III. Types of baths

A. Complete bed

(NOTE: This constitutes part of the daily care of any patient unable to bathe in another way.)

B. Partial bed

(NOTE: The patient may do as much of his bath as possible with the nurse washing the parts of the body the patient cannot reach. Partial bed bath may be given on the days the patient does not have a complete bath or may be given as part of evening care.)

C. Tub

D. Shower

(NOTE: Patient may take tub or shower bath if he is physically able.)

E. Sitz

(NOTE: Bath is given in sitz tub or bathtub. It is usually given for treatment of conditions affecting the lower body or pelvic regions.)

F. Incontinent care

(NOTE: A partial sponge bath is given to an incontinent patient whenever needed for cleanliness.)

G. Medicated

(NOTE: A tub or sponge bath using medicated water is given to treat or cleanse skin with a disease, infection, or disorder.)

IV. Procedures included in morning care

A. Checking daily care plan

B. Bath

(NOTE: Type of bath given depends upon patient's physical and mental condition.)

INFORMATION SHEET

   C. Mouth care

      (NOTE: Whenever possible, patient will help with his mouth care or take care of it alone. Feeble, helpless, or unconscious patients need mouth care as much as or even more than patients who can assist in their own care.)

   D. Care of fingernails and toenails

   E. Care of hair and scalp

   F. Shaving the male patient

      (NOTE: Determine institutional policy if patient is unable to shave himself.)

   G. Back care

   H. Bedmaking

   I. Providing fresh drinking water unless contraindicated

   J. Positioning and exercise as ordered or required

      (NOTE: When moving patients, support joints as necessary.)

   K. Additional care as required or ordered

V. Procedures included in evening care

   A. Partial bath as needed

   B. Back care

   C. Straightening and changing linen as needed

   D. Providing fresh drinking water

   E. Mouth care

PATIENT CLEANLINESS
UNIT VI

JOB SHEET #1–GIVE A COMPLETE BED BATH

I. Equipment needed

- A. Bed linen
- B. Bath blanket or cover
- C. Bath basin with water 105° to 115°F
- D. Soap and soap dish
- E. Washcloth
- F. Face towel
- G. Bath towel
- H. Gown
- I. Lotion
- J. Equipment for mouth care
- K. Equipment for nail care
- L. Brush and comb
- M. Linen receptacle
- N. Damp cloth
- O. Waste receptacle
- P. Sign for door

II. Procedure

- A. Check room temperature

  (NOTE: Temperature should be 75° to 80°F and room should be free of drafts.)
- B. Put sign on door of patient's room
- C. Identify patient, explain procedure, and provide for privacy
- D. Offer bedpan or urinal
- E. Wash your hands
- F. Assemble equipment needed and take to bedside; arrange linen in order of use

JOB SHEET #1

G. Assist with mouth care; assist with shaving as needed

H. Lower backrest and side rails; if two pillows are being used, remove one

I. Loosen top bedding; remove spread and blanket; fold and place them on the back of the chair

J. Replace top sheet with bath blanket; fold sheet and place on back of chair

K. Remove patient's gown or pajamas; have patient move to side of bed toward nurse

L. Give bath

1. Face, neck, and ears
    a. Place face towel across the upper edge of bath blanket
    b. Fold washcloth around hand to form a mitten
    c. Wash eyes with washcloth and dry with towel

       (NOTE: Do not use a soapy cloth.)
    d. Wash face, neck, and ears; rinse and dry with face towel

       (NOTE: Have patient wash face, neck, and ears if condition permits.)
2. Arms
    a. Expose only one arm at a time; place bath towel under arm farthest from nurse
    b. Wash arm with soapy washcloth, rinse, and dry, giving special care to axilla
    c. Repeat procedure on other arm
    d. Have patient place his hands in bath basin and wash and dry them well
    e. Clean and file nails if necessary
3. Chest and abdomen
    a. Place bath towel across chest
    b. Fold bath blanket to waist; wash chest and breasts under towel, rinse, and dry well

       (NOTE: Pay special attention to women with pendulous breasts.

JOB SHEET #1

   c. Turn bath towel lengthwise to cover chest and abdomen; fold blanket to pubic area; wash, rinse, and dry abdomen

   d. Replace bath towel with bath blanket

4. Legs

   a. Drape patient with bath blanket exposing lower leg and thigh farthest from nurse

   b. Place bath towel lengthwise under leg

   c. Wash, rinse, and dry leg

   d. Place basin on towel and put patient's foot in basin; wash well between toes and dry thoroughly

   e. Repeat procedure on other leg, thigh, and foot

5. Change water

6. Back

   a. Turn patient on side or abdomen

   b. Fold blanket so that back and buttocks are exposed

   c. Place bath towel on bed along patient's back

   d. Bathe, rinse, and dry back

   e. Bathe, rinse, and dry buttocks

   f. Rub back with lotion, giving special care to reddened areas over bony prominences

7. Completing bath

   a. Instruct patient to wash the genital area

   b. Place basin within reach of patient

   (NOTE: If patient is unable to finish bath, nurse will wash the genital area. In some health care institutions, the orderly will complete the bath for male patients.)

M. Assist patient in dressing and grooming

   1. Put on clean gown or pajamas

   2. Place a hand towel over pillow and comb hair for helpless patient

   3. Assist patient as needed with cosmetics

JOB SHEET #1

N. Care for patient's environment

  1. Empty bath basin; clean, and return all bathing equipment to bedside stand
  2. Change bed linens
  3. Replace clean towels and washcloth
  4. Place communication device and bedside stand within reach of patient
  5. Place waste receptacle conveniently
  6. Damp dust overbed table and bedside cabinet
  7. Discard soiled linen
  8. Remove sign from door

O. Wash hands

P. Report and record care and observations

PATIENT CLEANLINESS
UNIT VI

JOB SHEET #2–ASSIST WITH OR GIVE A PARTIAL BATH

I. Equipment needed

   A. Basin with warm water between 105° and 115°F

   B. Equipment for mouth care

   C. Toilet articles including shaving equipment for men

   D. Lotion

   E. Soap and soap dish

   F. Washcloth and towel

   G. Bath blanket or cover

   H. Linen for bed change

   I. Linen receptacle

   J. Damp cloth

   K. Waste receptacle

   L. Sign for door

II. Procedure

   A. Check room temperature

   (NOTE: Temperature should be 75° to 80°F and room should be free of drafts.)

   B. Put sign on door of patient's room

   C. Identify patient, explain procedure, and provide for privacy

   D. Offer bedpan or urinal

   E. Wash hands

   F. Assemble equipment and take to bedside

   G. Remove top bedding and replace with bath blanket; remove patient's gown

   H. Give patient ample time to bathe himself

JOB SHEET #2

I. Bathe legs if patient is unable to do so

J. Obtain clean water and wash back and buttocks

K. Give back rub

L. Assist patient in dressing and grooming

(NOTE: If permitted, assist patient to sit in chair while bed is being made.)

M. Care for patient's environment

1. Change bed linens
2. Leave all desired articles within reach of patient
3. Place communication device within convenient reach of patient
4. Clean and dry utensils and return to bedside stand
5. Replenish towels and washcloth
6. Place waste receptacle conveniently
7. Damp dust patient's unit
8. Remove sign from door

N. Wash hands

O. Report and record care and observations

PATIENT CLEANLINESS
UNIT VI

JOB SHEET #3--ASSIST WITH A TUB BATH

I. Equipment needed

- A. Face towel
- B. Two bath towels
- C. Washcloth
- D. Dish with soap
- E. Nonskid bath mat
- F. Bath mat
- G. Bath blanket or cover
- H. Gown, robe, and slippers
- I. Bath thermometer
- J. Lotion and deodorant
- K. Chair or stool
- L. Sign for bathroom door

II. Procedure

- A. Prepare bathroom and assemble equipment
  1. Have bathroom warm but well ventilated for comfort and safety
  2. Clean bathtub thoroughly
  3. Place nonskid bath mat in tub
  4. Fill tub about half full of water 95° to 105°F

     (NOTE: If no bath thermometer is available, test water temperature with elbow.)
  5. Place bath mat on floor beside tub
  6. Place sign on bathroom door

JOB SHEET #3

B. Prepare patient

   1. Escort patient to bathroom
   2. Explain communication device
   3. Help patient undress if necessary
   4. If assisting a male patient, secure towel around patient's waist to avoid embarrassment
   5. Instruct patient to leave bathroom door unlocked

C. Assist patient with bath

   1. Assist patient into tub
   2. Wash back and/or give bath as indicated
   3. Observe patient for any unusual symptoms

      (NOTE: If patient is left in bathroom alone, check him frequently. The patient's bed could be made at this time if it is close to the bathroom.)

   4. Do not leave the patient in the tub longer than eight to ten minutes without the doctor's permission

D. Place opened bath blanket on chair or stool beside tub

E. Allow water to run out

F. Assist patient out of tub

   1. Seat patient on stool; wrap bath blanket around lower part of body
   2. Dry skin by brisk use of towel or use firm patting motion if patient's skin is dehydrated, loose, and dry

G. Help patient dress

   1. Help patient into fresh dry clothing
   2. Return patient to unit and help into clean bed

H. Check bathroom

   1. Place towels, washcloth, and bath mat in hamper
   2. Clean tub thoroughly
   3. Ventilate room

JOB SHEET #3

4. Leave bathroom tidy
5. Remove sign from door

I. Care for patient's environment

1. Leave all desired articles within reach of patient
2. Place communication device within convenient reach of patient
3. Place clean towels and washcloth in bedside table
4. Damp dust patient's unit
5. Place waste receptacle conveniently

J. Wash hands

K. Report observations to charge nurse

L. Report and record care and observations

PATIENT CLEANLINESS
UNIT VI

JOB SHEET #4-ASSIST WITH A SHOWER BATH

I. Equipment needed

- A. Face towel
- B. Bath towel
- C. Washcloth
- D. Shower cap, if desired
- E. Soap and soap dish
- F. Nonskid bath mat
- G. Bath mat
- H. Bathroom stool
- I. Gown or pajamas, robe, and slippers
- J. Sign for door

II. Procedure

- A. Prepare shower
    - 1. Check temperature of the room; temperature should be between 75° and 80°F
    - 2. Place sign on door
    - 3. Place soap dish in rack and bath mat on floor
    - 4. Place bathroom stool in shower for patient to sit on
- B. Wash hands
- C. Assist patient
    - 1. Help patient with robe and slippers
    - 2. Escort to shower room
    - 3. Explain safety and communication device

JOB SHEET #4

D. Regulate shower

  1. Have water temperature comfortable to forearm before patient goes in shower
  2. Help patient undress and assist into shower as needed
  3. Remain within call
  4. Supervise or assist with showering or drying as necessary

E. Help patient dress

F. Escort patient back to unit; give back care

G. Prepare shower for next patient

  1. Remove soiled linen
  2. Clean shower
  3. Remove sign from door

H. Care for patient's environment

  1. Change bed linen
  2. Place communication device and bedside table within patient's reach
  3. Place clean towels and washcloth in bedside table
  4. Damp dust patient's unit
  5. Place waste receptacle conveniently

I. Wash hands

J. Report and record care and observations

PATIENT CLEANLINESS
UNIT VI

JOB SHEET #5–ASSIST WITH MOUTH CARE

I. Equipment needed

  A. Toothbrush

  B. Dentifrice or toothpaste

  C. Mouthwash solution

  D. Emesis basin

  E. Mouthwash cup

  F. Drinking tube

  G. Face towel

  H. Tissues

  I. Washcloth

  J. Denture cup if needed

II. Procedure

  A. Prepare patient

    1. Screen patient

    2. Explain procedure

  B. Wash hands

  C. Assemble equipment

  D. Prepare patient

    1. Raise head of bed as permitted

    2. Place towel over chest to protect gown and bed covers

    3. Place needed equipment on overbed table

JOB SHEET #5

E. Proceed with oral care

  1. Pour water over toothbrush, add dentifrice or toothpaste, and give toothbrush to patient for brushing

  2. Hold emesis basin under chin

  3. Have patient rinse his mouth with mouthwash solution and fresh water

F. Dry patient's face; remove towel

G. Care for equipment

  1. Rinse toothbrush thoroughly and return to bedside stand

  2. Empty emesis basin, wash, rinse, dry, and return to designated area

H. Make patient comfortable

I. Wash hands

J. Report and record care and observations

PATIENT CLEANLINESS
UNIT VI

JOB SHEET #6–GIVE MOUTH CARE TO A HELPLESS OR UNCONSCIOUS PATIENT

I. Equipment needed

  A. Towel

  B. Mouth wipes

  C. Emesis basin

  D. Cleansing agent

  E. Drinking tube

  F. Toothbrush or applicators

  G. Dentifrice

  H. Mouthwash solution in cup

  I. Denture cup

  J. Padded tongue depressor and plain tongue depressors

II. Procedure

  A. Explain procedure and provide privacy

  B. Wash hands

  C. Prepare patient

    1. Turn patient's head to one side

    2. Place towel under chin and to side of face

    3. Place emesis basin under mouth

    4. If necessary, use padded tongue depressor to hold patient's mouth open; do NOT use your fingers

  D. Moisten applicators with solution

  (CAUTION: Squeeze excess moisture against side of mouth cup to prevent patient from gagging and/or aspirating fluid.)

JOB SHEET #6

E. Cleanse upper and lower gums, teeth, and tongue

1. Hold cheek open with tongue depressor
2. Use proper stroke from gum line to apex of tooth
3. Using applicators, clean systematically from left side of mouth to front
4. Discard applicators and tongue depressor
5. Repeat from right side to front of mouth using fresh applicators and tongue depressor
6. Discard applicators and tongue depressor
7. Swab tongue from base to tip gently to prevent gagging

F. Apply lubricant on applicator to lips and outer areas of mouth

1. Lubricant prevents chapping and promotes healing
2. Vaseline or glycerine and lemon mixture may be used

G. Clean reuseable equipment and discard disposable equipment

H. Make patient comfortable

I. Wash hands

J. Report and record procedure

III. Equipment needed for care of dentures

A. Towel

B. Mouth wipes

C. Emesis basin

D. Cleansing agent

E. Drinking tube

F. Toothbrush

G. Dentifrice

H. Mouthwash solution in cup

I. Denture cup

J. 4 x 4s

JOB SHEET #6

IV. Procedure

A. Inform patient of procedure

B. Screen patient

C. Wash hands

D. Assist patient in removing dentures; place dentures in denture cup

(NOTE: Use 4 x 4s to hold dentures while removing them.)

E. Have patient rinse mouth with water or mouthwash solution

F. Clean dentures thoroughly with brush and dentifrice, holding the denture over a basin of water

(CAUTION: Use cool or slightly warm water. Hot water may cause dentures to crack or break. If a denture accidently slips from your hands, the fall would be cushioned by water in the basin so it would not break.)

G. Place dentures in a denture cup containing fresh mouthwash solution or water

H. Wash hands

I. Return dentures to patient; assist him to replace them

J. If not returned to patient's mouth, leave the dentures in solution in a denture cup marked with the patient's name

K. Wash hands

L. Report and record procedure

PATIENT CLEANLINESS
UNIT VI

JOB SHEET #7-COMB HAIR

I. Equipment needed

  A. Towel

  B. Comb

  C. Brush

II. Procedure

  A. Wash hands

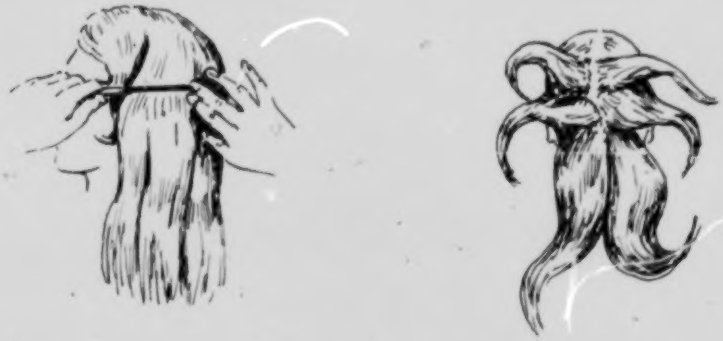
  B. Inform and prepare patient

    1. Assist patient into comfortable position

    2. Place towel under head if in bed or around shoulders if in chair

  C. Part hair in sections (Figure 1)

FIGURE 1



    1. Comb or brush each section, holding hair with one hand near head to avoid pulling

    2. Wet matted hair with alcohol to facilitate combing

    3. Part and arrange hair according to wishes of patient

  D. Observe condition of scalp and hair and report any unusual findings to charge nurse

  E. Wash hands

  F. Record and report procedure and observations

PATIENT CLEANLINESS
UNIT VI

JOB SHEET #8 SHAMPOO HAIR

I. Equipment needed

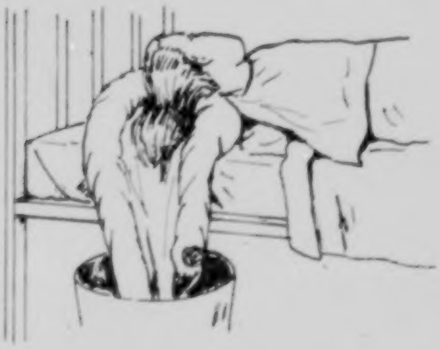
- A. Shampoo board or waterproof sheet
- B. Large pitcher
- C. Small pitcher
- D. Large pail
- E. Waterproof protection for pillow
- F. Soap solution or shampoo
- G. Newspaper
- H. Bath towels
- I. Hair dryer, if available

II. Procedure

- A. Wash hands
- B. Prepare patient and unit
  1. Place bucket on newspaper-covered chair at head of bed
  2. Lower backrest of bed and place protective pillow covered with the bath towel under patient's head and shoulders
  3. Place shampoo board under head of patient directing end into bucket on chair

     (NOTE: If shampoo board is not available, place waterproof sheet over pillow; roll side edges of sheet to form a trough. See Figure 1.)

FIGURE 1



JOB SHEET #8

4. Cover patient with bath blanket

5. Fanfold top bedding to foot of bed

C. Give shampoo

1. Hold pitcher at side of head so that solution is not spilled in face

2. Wet hair by pouring small amount of soap solution or shampoo over head

3. Lather and massage the scalp well using fingertips

4. Rinse by pouring water from pitcher over hair

5. Repeat lathering and massaging until hair is clean

6. Rinse and repeat until clear of soap

D. Dry hair

1. Dry forehead and ears with towel

2. Wrap head in towel

3. Remove shampoo board or waterproof sheet and towel from under head

4. Towel dry hair as much as possible

5. Brush and comb hair

6. Complete drying with dryer or towel

E. Make patient comfortable

1. Replace gown if wet

2. Replace bath blanket with top bedding

3. Change pillowcase

4. Straighten unit; place communication device within reach of the patient

F. Remove equipment

1. Wash, rinse, and dry shampoo board and pitchers

2. Return to proper place

JOB SHEET #8

G. Wash hands

H. Report and record care and observations

III. Procedure using dry shampoo--Follow manufacturer's instructions

PATIENT CLEANLINESS
UNIT VI

JOB SHEET #9--GIVE A BACK RUB

I. Equipment needed

  A. Bath towel

  B. Lotion

  C. Washcloth

  D. Basin with warm water

  E. Soap and soap dish

II. Procedure

  A. Wash hands

  B. Assemble equipment

    1. Explain procedure to patient

    2. Screen patient

  C. Assist patient

    1. Have patient turn on side

    2. Place bath towel close to patient's back to protect bedding

  D. Give back care

    1. Wash, rinse, and dry back

    2. Apply lotion to entire back; beginning at lumbosacral area, apply up both sides of spinal column to neck, across shoulders, and down to lumbosacral area

    3. Give attention to bony prominences, reddened areas, or pressure areas

  D. After care

    1. Adjust bed covers and assist patient to comfortable position

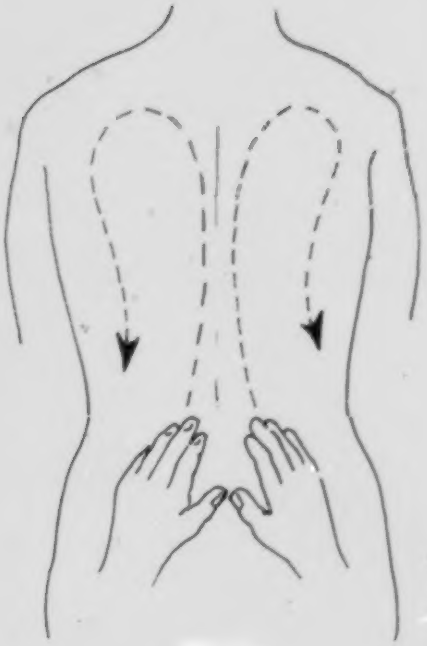
    2. Remove equipment, clean, and return to proper place

  E. Wash hands

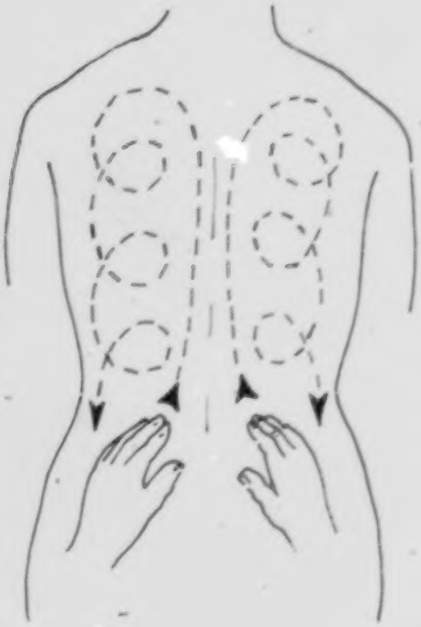
  F. Report and record procedure and observations

JOB SHEET #9

III. Diagram of procedure



Long Strokes



Circular Strokes

PATIENT CLEANLINESS
UNIT VI

JOB SHEET #10-SHAVE A MALE PATIENT

I. Equipment needed

  A. Basin of hot water

  B. Shaving brush and shaving cream

  C. Safety or straight razor

  D. After-shave lotion

  E. Tissues

  F. Mirror

  G. Face powder

  H. Face towel

II. Procedure

  A. Wash hands

  B. Prepare patient

    1. Raise head of bed

    2. Spread towel under patient's chin

  C. Prepare equipment

    1. Adjust light so that it shines on patient's face

    2. Assemble and place equipment on bedside table

  D. Shave patient

    1. Pat some warm water on patient's face to soften beard

    2. Apply shaving soap or lather generously to patient's face

    3. With fingers of one hand, hold the skin taut as you shave in the direction that the hair grows

    4. Start under the sideburns and work downward over the cheeks

    5. Continue carefully over the chin; work upward on the neck under the chin

    6. Use short strokes

JOB SHEET #10

E. Complete after shave care

  1. Wash patient's face and neck to remove remaining soap or lather

  2. Apply antiseptic if skin has been nicked

  3. Apply after-shave lotion and powder if patient so desires

F. Care for equipment

  1. Wash, rinse, and dry razor and other equipment

  2. Replace equipment in proper place

G. Wash hands

H. Report and record procedure

PATIENT CLEANLINESS
UNIT VI

JOB SHEET #11-GIVE CARE TO AN INCONTINENT PATIENT

I. Equipment needed

- A. Bed linen as needed
- B. Bath blanket or cover
- C. Bath towels
- D. Washcloths
- E. Bedpan
- F. Toilet tissue
- G. Incontinent pads
- H. Gown or pajamas
- I. Disposable plastic bag

II. Procedure

- A. Wash hands
- B. Assemble equipment
- C. Inform and prepare patient
- D. Provide privacy
- E. Begin procedure
  1. Replace top bedding with bath blanket or cover
  2. Remove patient's gown or pajamas
  3. Turn patient on side, fold back bath blanket exposing area to be washed
  4. Remove soiled pad and place in disposable plastic bag
  5. If drawsheet is wet or soiled, loosen from under mattress and tuck toward the patient keeping soiled part inside
  6. Wipe anal area with tissue and place in plastic bag

JOB SHEET #11

7. Wash and dry buttocks, thighs, and genital area

8. Rub back and buttocks with lotion

F. Change bed linens

1. Change drawsheet

2. Place incontinent pad under buttocks

3. Have patient turn onto clean side of bed, then go to other side of bed

4. Remove soiled drawsheet, straighten out incontinent pad, and tuck clean drawsheet under mattress

5. Rub back and affected areas with lotion

(NOTE: This improves circulation, protects the skin, and prevents pressure areas.)

G. Complete care of patient

1. Put on gown or pajamas

2. Straighten top bedding and remove bath blanket

3. Place patient in comfortable positon

H. Straighten unit

1. Empty bath basin

2. Discard soiled linen

(NOTE: Care of soiled linen will depend on particular institutional policy; the person in charge can provide this information.)

I. Wash hands

J. Record care and observations

PATIENT CLEANLINESS
UNIT VI

TEST

1. Match the terms on the right to the correct definition.

_____a. Moderately warm or lukewarm

_____b. Able to walk

_____c. Opening of the rectum

_____d. One in which the patient sits immersing only hips and buttocks

_____e. Organs of the reproductive system, especially the external organs

_____f. Inability to retain urine or feces through loss of sphincter control

_____g. Removal of areas of skin by trauma, scraping, or scratching

_____h. Area under arm; armpit

_____i. Shortening or tightening of a muscle due to spasm, paralysis, or disease

_____j. Prominence of gluteal muscles on the posterior part of the body at the hipline

_____k. Lesion usually over a bony prominence due to local interference of circulation

_____l. Small depression on the abdomen marking the former attachment of the umbilical cord to the fetus

1. Incontinence
2. Denture
3. Genitalia
4. Trauma
5. Contracture
6. Tepid
7. Sphincter
8. Sitz tub
9. Umbilicus
10. Anus
11. Excoriation
12. Buttocks
13. Ambulatory
14. Axilla
15. Decubitus ulcer

______m. Circular muscle surrounding and closing an opening

______n. Complement of teeth, either natural or artificial; artificial replacement of one or more teeth, especially a set of false teeth

______o. Wound or injury, especially that caused by external force

2. List six purposes of daily body care.

   a.

   b.

   c.

   d.

   e.

   f.

3. List five types of baths.

   a.

   b.

   c.

   d.

   e.

4. List eight procedures included in morning care.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

5. List five procedures included in evening care.

   a.

   b.

   c.

   d.

   e.

6. Demonstrate the ability to:

   a. Give a complete bed bath.

   b. Assist with or give a partial bath.

   c. Assist with a tub bath.

   d. Assist with a shower bath.

   e. Assist with mouth care.

   f. Give mouth care to a helpless or unconscious patient.

   g. Comb hair.

   h. Shampoo hair.

   i. Give a back rub.

   j. Shave a male patient.

   k. Give care to an incontinent patient.

   (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

PATIENT CLEANLINESS
UNIT VI

ANSWERS TO TEST

1.
   - a. 6
   - b. 13
   - c. 10
   - d. 8
   - e. 3
   - f. 1
   - g. 11
   - h. 14
   - i. 5
   - j. 12
   - k. 15
   - l. 9
   - m. 7
   - n. 2
   - o. 4

2. Any six of the following
   - a. Cleanse, refresh, and soothe the patient
   - b. Stimulate circulation
   - c. Improve elimination
   - d. Relax muscles
   - e. Prevent contractures with planned exercises
   - f. Observe patient's physical and mental status
   - g. Relieve restlessness
   - h. Observe patient's skin for pressure areas, bruises, excoriations, rashes, or other lesions

3. Any five of the following
   - a. Complete bed
   - b. Partial bed
   - c. Tub
   - d. Shower
   - e. Sitz
   - f. Incontinent care
   - g. Medicated

4. Any eight of the following
    - a. Checking daily care plan
    - b. Bath
    - c. Mouth care
    - d. Care of fingernails and toenails
    - e. Care of hair and scalp
    - f. Shaving the male patient
    - g. Back care
    - h. Bedmaking
    - i. Providing fresh drinking water unless contraindicated
    - j. Positioning and exercise as ordered or required
    - k. Additional care as required or ordered
5. a. Partial bath as needed
    - b. Back care
    - c. Straightening and changing linen as needed
    - d. Providing fresh drinking water
    - e. Mouth care
6. Performance skills will be evaluated to the satisfaction of the instructor.

OBSERVATION AND RECORDING
UNIT VII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to match terms, abbreviations, and symbols to the correct definitions. The student should be able to list symptoms, rules and guidelines for reporting and recording, and purposes of the patient's record. The student should be able to describe the care and contents of the patient's record. This knowledge will be evidenced by scoring eighty-five percent on the unit test and by evaluation throughout the course.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with observation and recording to the correct definition.
2. List five purposes of observation and keeping records.
3. List the five skills involved in observation giving two specific ways each skill may be used.
4. List six categories of objective symptoms or signs of which the nurse should be observant.
5. List eight subjective symptoms.
6. List six guidelines to use in reporting observations.
7. Describe the care of the patient's record.
8. Describe the contents of the patient's record.
9. List ten general rules for charting.
10. List ten specific procedures or observations which should be charted.
11. Write the meaning of abbreviations selected by the instructor.
12. Match numbers and symbols to the correct meaning.

OBSERVATION AND RECORDING
UNIT VII

SUGGESTED ACTIVITIES

I. Instructor:
   A. Provide students with objective sheet.
   B. Provide students with information sheet.
   C. Obtain charting forms from the hospital.
   D. Discuss information sheets.
   E. Identify the sheets of a patient's record and discuss the use of each.
   F. Give test.

II. Student:
   A. Read objectives.
   B. Study information sheet.
   C. Participate in discussion.
   D. Examine the sheets of a patient's record.
   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
   A. Objectives
   B. Information sheet
   C. Test
   D. Answers to test

II. References:
   A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Smith, Genevieve E. *A Teaching Plan for the Practical Nursing Curriculum.* New Brunswick, New Jersey: Rutgers University Curriculum Laboratory, 1973.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. Wood, Lucile A. *Nursing Skills for Allied Health Services.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1972.

III. Filmstrips:

A. "Observation and Charting." Trainex Corporation.

B. "Maintaining the Patient's Chart." Trainex Corporation.

OBSERVATION AND RECORDING
UNIT VII

INFORMATION SHEET

I. Terms and definitions

   A. Observation--Gathering data, noting facts and happenings

   B. Disorientation--State of mental confusion as to time, place, or identity

   C. Excreta--Waste material eliminated from the body including feces, urine, and perspiration

   D. Symptom--A recognizable change in the physical or mental state of a person

   E. Objective symptom or sign--Evidence of disease or dysfunction that can be seen, heard, felt, smelled, or otherwise readily observed

   F. Subjective symptom--One felt or experienced by the individual

   G. Apathy--Indifference; lack of feeling or emotion

   H. Stuporous--Partially or nearly unconscious

   I. Coma--State of profound unconsciousness from which the patient cannot be aroused

   J. Sallow--Pale, yellowish color of skin

   K. Cyanosis--Bluish discoloration of the skin due to lack of oxygen

   L. Ashen--Very pale color of the skin

   M. Mottled--Irregular, patchy color of the skin

   N. Jaundice--Yellowness of the skin and the sclera of the eyes

   O. Stertorous--Noisy, snoring-type respirations

   P. Sputum--Mucous secretion from the lungs, bronchi, and trachea which is expectorated from the mouth

II. Purposes of observation and keeping records

   A. Provide a continuous, detailed account of the patient's behavior, illness, treatment, medications, and nursing care

   B. Record progress being made by the patient and assist the physician in diagnosis and in planning further medical care

INFORMATION SHEET

C. Serve as a guide in planning and carrying out nursing care

D. Aid other health workers in the care and treatment of the patient and his family

E. Provide statistical information for local, state, and national health service planning

F. Provide information if needed in legal proceedings

G. Serve as source of information for research and for medical or nursing students

III. Observation skills

A. Looking

1. Note facial expression for alertness, pain or discomfort, satisfaction, worry, or other reactions

2. Check skin for color, rashes, temperature, evidence of pressure, breaks, or other abnormal conditions

3. Note patient's surroundings for orderliness, attractiveness, comfort, convenience, and safety

4. Observe other factors concerning the patient's condition such as amount, character, and color of body discharges or drainage from wounds

B. Listening

1. Hear not only the words of the patient but tone of voice and hidden meanings

2. Note quality of respirations, restlessness, wakefulness, or signs of disorientation

3. When using special equipment such as respirators or heart monitors, be aware of their characteristic sounds

4. Using a stethoscope, develop special listening skill

C. Smelling

1. Note any unusual odors in the environment

2. Observe changes in the characteristic odor of human excreta and drainage from wounds

INFORMATION SHEET

D. Talking

1. Nurse's manner of speaking conveys her attitude and response

2. Skillful questioning is essential in gaining information from patients

3. Communication with members of the health team and/or the family aids in patient care and planning

E. Touching or feeling

1. Sense of touch detects abnormalities of skin or temperature

2. Taking the pulse is one of the most valuable observations by touch

3. Nurse's touch communicates security and ability to the patient

IV. Objective symptoms

A. General appearance

1. Height, weight, size, state of health

2. Expression or appearance of the face

3. Deformities and obvious blemishes

B. Body alignment and activity

1. Posture

2. Gait--Rapid, slow, hesitant; uses cane or crutches

3. Muscular control and activity

4. Loss of an extremity or loss of function of a part

C. Mental condition

1. Mood--Happy, content, sad, disturbed, apathetic, frightened, anxious

2. State of alertness--Conscious, unconscious, disoriented, confused, stuporous, comatose

INFORMATION SHEET

D. Condition of skin

1. Color--Pale, red, sallow, flushed, cyanotic, ashen, jaundice, mottled

2. Texture--Dry, oily, dehydrated, moist; with lacerations, rashes, swelling, lesions, or pressure areas

3. Swelling or edema--General or local

E. Sleep and rest

1. Sleep habits--Length of time; quietly, restlessly, at intervals, wakeful

2. Daytime habits--Drowsiness, need for additional pillows

F. Respirations--Regular, noisy, labored, painful, grunting, stertorous, coughing, sneezing, Cheyne-Stokes

G. Drainage--Character and amount

H. Urine, feces, sputum, vomitus--Color and amount

I. Special senses

1. Vision--Limited, apparently normal, wears glasses

2. Hearing--Impaired, deaf, one or both ears affected, wears hearing aid

V. Subjective symptoms

A. Vertigo--Dizziness

B. Tinnitus--Ringing in the ears

C. Fatigue

D. Visual disturbances

E. Pain or discomfort--Sharp, dull

F. Nausea

G. Thirst

H. Skin manifestations--Burning, tenderness, itching

I. Fear

J. Anxiety

K. Anger

INFORMATION SHEET

VI. Guidelines in reporting observations

(NOTE: These guidelines are not arranged according to importance. All factors will not be used in all recordings.)

A. Time--When symptom was observed; important in observation

B. Location--As accurately as possible

C. Duration--Length of time symptom or condition lasted

D. Amount, color, and character of urine, feces, discharge, sputum, drainage

E. Frequency and intensity of pain--Intermittent or constant, severe, throbbing, dull, or sharp

F. Change in appearance of patient such as skin color, expression, or behavior

G. Effect of treatment or nursing measures

H. Complaints of patient using his exact words when indicated

VII. Care of the patient's record

A. In current use

1. Usually all patients' charts are kept in a central area such as the nurses' station

2. The institution has a legal and moral obligation to maintain the privacy of the patient's record

3. Chart should be accessible only to authorized persons, primarily those actively involved in the care of the patient

B. For reference after patient's discharge from the institution

1. Records of discharged patients are retained by the medical records department

2. Health care institutions are legally required to retain records for a length of time which varies from place to place

3. After a period of years, records may be microfilmed or made into briefs or abstracts

4. Records are not removed from the institution except under unusual circumstances, such as by an order of a court of law

INFORMATION SHEET

VIII. Contents of the patient's record

A. Identifying information--May be called information or admission sheet; gives general information about the patient

(NOTE: It usually includes his name, address, age, Social Security number, marital status, religious preference, sex, nearest relative, insurance number, and physician's name.)

B. Physician's notes--Usually includes history of past and present illnesses, physical examination, current diagnosis, and prognosis

C. Doctor's orders--Contains all physician's orders

(NOTE: All orders must be signed by the physician.)

D. Progress notes--Usually written by the physician or his representative

E. Laboratory reports--Record of results of laboratory tests

F. Graphic sheet--For recording vital signs

G. Nurses' notes--For recording care given including daily care, medications, treatments, vital signs, diet, and remarks by the nurses

H. Other special forms such as diabetic sheet, permission for surgery or other special treatment, intake and output records

IX. Some general rules for charting

(NOTE: Charting methods vary in health care institutions. Before charting, consult the nurse in charge about the practices in a particular institution.)

A. Entries should be printed or handwritten in a neat, legible form; after completing entry, sign name and title

B. When an error in charting is made, usually a line is drawn through the entry and the words "error in charting" are printed above it and initialed; NEVER erase an entry

C. Record after completing a task, not before

D. Be exact in recording time, effects, and results of all treatments and procedures

E. Check with health facility to learn the color of ink to be used for charting

(NOTE: If a record is to be microfilmed, black or blue ink may be preferred as red does not microfilm.)

INFORMATION SHEET

F. Use a minimum number of standard abbreviations

G. Use of ditto marks is not permissible

H. Do not use the word "patient"; the complete chart refers to the patient

I. Spell correctly; use a dictionary when necessary to check the spelling of a word

J. Statements should be clear, concise, and exact

K. Fill out all page headings consistently and completely before charting anything on the page

L. Entries on "Nurses' Notes" should be recorded on consecutive lines; do not skip lines

X. Procedures or observations which should be charted

(NOTE: Information regarding the patient is recorded in the space designated for it. Some information, such as vital signs, may be charted in more than one place.)

A. Baths and packs--Accurate description

B. Dressings--Appearance of wound, character and amount of drainage, and type of dressing applied

C. Diet--Type and amount of food and fluids taken

D. Output--Emesis, defecation, urine, wound drainage, perspiration, and amount obtained from suction

E. Applications of heat and cold--Type, duration, location, temperature, and effects

F. Body care--Back care, mouth care, type of bath, positioning, and any special care given such as lotions or ointments

G. Activity--Amount and tolerance

H. Specimens--Time and kind sent to laboratory

I. Oxygen--Time begun and discontinued and method used

J. Medication--Time, amount, method of administration, and any reaction

K. Sleep--Amount during day or night

L. Intravenous infusion--Kind, where given, rate, time begun and completed, amount, and patient reaction

INFORMATION SHEET

M. Treatment, surgery, or X ray away from patient's unit--Time patient leaves unit and returns, mode of transportation, and destination

N. All procedures--Type, time, outcome, and reaction

O. Mental symptoms, state of consciousness, convulsions, or other new signs or symptoms

P. Visits of physicians

Q. Orders noted and action taken

R. Vital signs

XI. Commonly used abbreviations

(NOTE: Others may be found in a dictionary or in books of medical terminology.)

Abbreviation	Meaning
āā	of each
abd	abdomen
ac	before meals
ad lib	as needed
a.m.	morning
amb	ambulatory, walking
amt	amount
approx	approximately
ax	axillary
bid	twice per day
BMR	basal metabolic rate
BM	bowel movement
BP	blood pressure
BRP	bathroom privileges
c	centigrade
c	with
CA or ca	cancer
cc (c.c.)	cubic centimeters
CD	communicable disease
cm	centimeter
cmpd	compound
clysis	hypodermoclysis; fluid given under skin
c/o	complains of
CVA	cerebrovascular accident
DC	discontinue
dist	distilled
dr	dram
ECG (EKG)	electrocardiogram; tracing of heart function
EEG	electroencephalogram; brain wave tracing

INFORMATION SHEET

ER	emergency room
elix	elixir
exam	examination
ext	extract
F	Fahrenheit
Fe	iron
fld	fluid
GI	gastrointestinal
gm	gram
gr	grain
gtt	drop
GU	genitourinary
gyn	gynecology
h	hour
hi-cal	high calorie
hi-vit	high vitamin
Hgb	hemoglobin
H_2O	water
hs	bedtime; hours of sleep
hypo	hypodermically
invol	involuntary; without knowledge of
irrig	irrigate or irrigation
I and O	intake and output
IV	intravenous
kg	kilogram
l	liter
lab	laboratory
lb	pound
liq	liquid
LLQ	left lower quadrant; left lower section of abdomen
LUQ	left upper quadrant
m	minim
med	medical or medication
mid	middle
min	minute
mg	milligram
mm	millimeter
no or #	number
noc	night
NPN	nonprotein nitrogen content of blood
NPO	nothing by mouth; nothing per os
O_2	oxygen
OB	obstetrics
OR	operating room
o.d.	right eye
o.u.	each eye
oz	ounce
o.s.	left eye
ot	occupational therapy
p	pulse
Ped, Peds, or Pedi	pediatrics
per	by or through

INFORMATION SHEET

per os	by mouth
po	per os; by mouth
post-op	post-operative
prn	when necessary
pre-op	pre-operative
psych	psychology or psychiatry
pt	patient
PT	physical therapist or therapy
pulv	powder
qd	every day
qh	every hour
qid	four times per day
qod	every other day
qs	quantity sufficient
r or resp	respirations
RBC	red blood cell
RLQ	right lower quadrant of abdomen
RUQ	right upper quadrant of abdomen
s	without
Sol	solution
sp gr	specific gravity
s.s.	soapsuds
ss	one-half
stat	at once
surg	surgical
tab	tablet
tid	three times per day
TL	team leader
TLC	tender, loving care
TPR	temperature, pulse, respiration
tr	tincture
ung	ointment
VD	veneral disease
via	by way of
WBC	white blood cell
wt	weight

INFORMATION SHEET

XII. Numbers and symbols commonly used in charting

(NOTE: These are standard and are used most frequently. Others may be found in a dictionary, books of medical terminology, or pharmacology books.)

one	$\dot{\overline{\text{i}}}$	seven	$\overline{\text{vii}}$
two	$\overline{\text{ii}}$	eight	$\overline{\text{viii}}$
three	$\overline{\text{iii}}$	nine	$\overline{\text{ix}}$
four	$\overline{\text{iv}}$	ten	$\overline{\text{x}}$
five	$\overline{\text{v}}$	eleven	$\overline{\text{xi}}$
six	$\overline{\text{vi}}$	twelve	$\overline{\text{xii}}$
and	et, +, &	one and one-half	$\overline{\text{iss}}$
three ounces	℥iii	two drams	ʒii
dram	ʒ	ounce	℥
one-half	$\overline{\text{ss}}$	one-half grain	gr $\overline{\text{ss}}$

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OBSERVATION AND RECORDING
UNIT VII

TEST

1. Match terms on the right to the correct definition.

______a. Evidence of disease or dysfunction that can be seen, heard, felt, smelled, or otherwise readily observed

______b. Bluish discoloration of the skin due to lack of oxygen

______c. State of profound unconsciousness from which the patient cannot be aroused

______d. A recognizable change in the physical or mental state of a person

______e. Mucous secretion from the lungs, bronchi, and trachea which is expectorated from the mouth

______f. Noisy, snoring-type respirations

______g. Yellowness of the skin and the sclera of the eyes

______h. Very pale color of the skin

______i. Partially or nearly unconscious

______j. Pale, yellowish color of the skin

______k. Indifference; lack of feeling or emotion

______l. Waste material eliminated from the body including feces, urine, and perspiration

______m. State of mental confusion as to time, place, or identity

1. Symptom
2. Jaundice
3. Observation
4. Apathy
5. Subjective symptom
6. Ashen
7. Disorientation
8. Coma
9. Sputum
10. Mottled
11. Excreta
12. Stertorous
13. Stuporous
14. Sallow
15. Cyanosis
16. Objective symptom or sign

______n. Gathering data, noting facts and happenings

______o. One felt or experienced by the individual

______p. Irregular, patchy color of the skin

2. List five purposes of observation and keeping records.

   a.

   b.

   c.

   d.

   e.

3. List the five skills involved in observation giving two specific ways each skill may be used.

   a.

   b.

   c.

   d.

e.

4. List six categories of objective symptoms or signs of which the nurse should be observant.

   a.

   b.

   c.

   d.

   e.

   f.

5. List eight subjective symptoms.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

6. List six guidelines to use in reporting observations.

   a.

   b.

   c.

   d.

   e.

   f.

7. Describe the care of the patient's record.

   a. In current use

   b. For reference after patient's discharge from the institution

8. Describe the contents of the patient's record.

9. List ten general rules for charting.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

   i.

   j.

10. List ten specific procedures or observations which should be charted.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

   i.

   j.

11. Write the correct meaning for the following abbreviations.

(NOTE TO INSTRUCTOR: Select those abbreviations over which the students will be tested.)

12. Match the numbers and symbols on the right to the correct meaning.

______a. And

______b. Four

______c. One-half

______d. Dram

______e. Eleven

______f. Seven

______g. Two

______h. Twelve

______i. One and one-half

______j. Ten

______k. One-half grain

______l. Six

______m. Three

______n. Two drams

______o. Nine

______p. One

______q. Ounce

______r. Three ounces

______s. Five

______t. Eight

1. x
2. viii
3. ii
4. iss
5. ℥
6. i
7. ix
8. et, +, &
9. ℥ iii
10. v
11. vii
12. ʒ ii
13. ʒ
14. xi
15. iii
16. gr ss
17. vi
18. xii
19. $\overline{ss}$
20. iv

OBSERVATION AND RECORDING
UNIT VII

ANSWERS TO TEST

1. a. 16
   b. 15
   c. 8
   d. 1
   e. 9
   f. 12
   g. 2
   h. 6
   i. 13
   j. 14
   k. 4
   l. 11
   m. 7
   n. 3
   o. 5
   p. 10

2. Any five of the following

   a. Provide a continuous, detailed account of the patient's behavior, illness, treatment, medications, and nursing care

   b. Record progress being made by the patient and assist the physician in diagnosis and in planning further medical care

   c. Serve as a guide in planning and carrying out nursing care

   d. Aid other health workers in the care and treatment of the patient and his family

   e. Provide statistical information for local, state, and national health service planning

   f. Provide information if needed in legal proceedings

   g. Serve as a source of information for research and for medical or nursing students

3. Answers should include the five skills and any two items under each skill.

   a. Looking

      1) Note facial expression for alertness, pain or discomfort, satisfaction, worry, or other reactions

      2) Check skin for color, rashes, temperature, evidence of pressure, breaks, or other abnormal conditions

      3) Note patient's surroundings for orderliness, attractiveness, comfort, convenience, and safety

        4) Observe other factors concerning the patient's condition such as amount, character, and color of body discharges or drainage from wounds

  b. Listening

        1) Hear not only the words of the patient but tone of voice and hidden meanings

        2) Note quality of respirations, restlessness, wakefulness, or signs of disorientation

        3) When using special equipment such as respirators or heart monitors, be aware of their characteristic sounds

        4) Using a stethoscope, develop special listening skill

  c. Smelling

        1) Note any unusual odors in the environment

        2) Observe changes in the characteristic odor of human excreta and drainage from wounds

  d. Talking

        1) Nurse's manner of speaking conveys her attitude and response

        2) Skillful questioning is essential in gaining information from patients

        3) Communication with members of the health team and/or the family aids in patient care and planning

  e. Touching or feeling

        1) Sense of touch detects abnormalities of skin or temperature

        2) Taking the pulse is one of the most valuable observations by touch

        3) Nurse's touch communicates security and ability to the patient

4. Any six of the following

  a. General appearance

  b. Body alignment and activitiy

  c. Mental condition

  d. Condition of skin

  e. Sleep and rest

   - f. Respirations
   - g. Drainage
   - h. Urine, feces, sputum, and vomitus
   - i. Special senses

5. Any eight of the following
   - a. Vertigo--Dizziness
   - b. Tinnitus--Ringing in the ears
   - c. Fatigue
   - d. Visual disturbances
   - e. Pain or discomfort--Sharp, dull
   - f. Nausea
   - g. Thirst
   - h. Skin manifestations--Burning, tenderness, itching
   - i. Fear
   - j. Anxiety
   - k. Anger

6. Any six of the following
   - a. Time--When symptom was observed; important in observation
   - b. Location--As accurately as possible
   - c. Duration--Length of time symptom or condition lasted
   - d. Amount, color, and character of urine, feces, discharge, sputum, drainage
   - e. Frequency and intensity of pain--Intermittent or constant, severe, throbbing, dull, or sharp
   - f. Change in appearance of patient such as skin color, expression, or behavior
   - g. Effect of treatment or nursing measures
   - h. Complaints of patient using his exact words when indicated

7. Description should include:

   a. In current use

      1) Usually all patients' charts are kept in a central area such as the nurses' station

      2) The institution has a legal and moral obligation to maintain the privacy of the patient's record

      3) Chart should be accessible only to authorized persons, primarily those actively involved in the care of the patient

   b. For reference after patient's discharge from the institution

      1) Records of discharged patients are retained by the medical records department

      2) Health care institutions are legally required to retain records for a length of time which varies from place to place

      3) After a period of years, records may be microfilmed or made into briefs or abstracts

      4) Records are not removed from the institution except under unusual circumstances, such as by an order of a court of law

8. Description should include:

   a. Identifying information--May be called information or admission sheet; gives general information about the patient

   b. Physician's notes--Usually includes history of past and present illnesses, physical examination, current diagnosis, and prognosis

   c. Doctor's orders--Contains all physician's orders

   d. Progress notes--Usually written by the physician or his representative

   e. Laboratory reports--Record of results of laboratory tests

   f. Graphic sheet--For recording vital signs

   g. Nurses' notes--For recording care given including daily care, medications, treatments, vital signs, diet, and remarks by the nurses

   h. Other special forms such as diabetic sheet, permission for surgery or other special treatment, intake and output records

9. Any ten of the following

   a. Entries should be printed or handwritten in a neat, legible form; after completing entry, sign name and title

b. When an error in charting is made, usually a line is drawn through the entry and the words "error in charting" are printed above it and initialed; NEVER erase an entry

c. Record after completing a task, not before

d. Be exact in recording time, effects, and results of all treatments and procedures

e. Check with health facility to learn the color of ink to be used for charting

f. Use a minimum number of standard abbreviations

g. Use of ditto marks is not permissible

h. Do not use the word "patient"; the complete chart refers to the patient

i. Spell correctly; use a dictionary when necessary to check the spelling of a word

j. Statements should be clear, concise, and exact

k. Fill out all page headings consistently and completely before charting anything on the page

l. Entries on "Nurses' Notes" should be recorded on consecutive lines; do not skip lines

10. Any ten of the following

a. Baths and packs--Accurate description

b. Dressings--Appearance of wound, character and amount of drainage, and type of dressing applied

c. Diet--Type and amount of food and fluids taken

d. Output--Emesis, defecation, urine, wound drainage, perspiration, and amount obtained from suction

e. Applications of heat and cold--Type, duration, location, temperature, and effects

f. Body care--Back care, mouth care, type of bath, positioning, and any special care given such as lotions or ointments

g. Activity--Amount and tolerance

h. Specimens--Time and kind sent to laboratory

i. Oxygen--Time begun and discontinued and method used

j. Medication--Time, amount, method of administration, and any reaction

k. Sleep--Amount during day or night

l. Intravenous infusion--Kind, where given, rate, time begun and completed, amount, and patient reaction

m. Treatment, surgery, or X ray away from patient's unit--Time patient leaves unit and returns, mode of transportation, and destination

n. All procedures--Type, time, outcome, and reaction

o. Mental symptoms, state of consciousness, convulsions, or other new signs or symptoms

p. Visits of physicians

q. Orders noted and action taken

r. Vital signs

11. Answers will be determined by the abbreviations selected by the instructor.

12.

a.	8	f.	11	k.	16	p.	6
b.	20	g.	3	l.	17	q.	5
c.	19	h.	18	m.	15	r.	9
d.	13	i.	4	n.	12	s.	10
e.	14	j.	1	o.	7	t.	2

PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list ways movement and activity affect body functions and nursing measures which provide patient movement and activity. The student should be able to identify various patient positions and list ways of increasing patient safety. This knowledge will be evidenced by scoring eighty-five percent on the unit test and by evaluation throughout the course of study.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with patient movement and activity to the correct definition.
2. List six ways in which exercise promotes the functioning of the patient's body.
3. List two examples of each of the three factors which alter mobility.
4. Discuss the development of contractures.
5. List eight possible effects of immobility besides contractures.
6. List three nursing measures which prevent or decrease the effects of immobility.
7. List four types of activity or exercise for patients.
8. Match the body position to the correct description.
9. List ten devices which may be used for the therapeutic comfort of patients confined to bed.
10. List eight ways of maintaining the safety of the bed patient.
11. List three safety devices for patients confined to bed and one instance in which each device might be used.
12. List six precautions to observe when using devices that restrict movement.
13. Demonstrate the ability to:
    a. Perform range-of-motion exercises.

b. Perform range-of-motion exercises for the patient.

c. Position the patient.

d. Assist patient to dangle.

e. Get patient into a chair and a wheelchair.

f. Assist patient to walk.

g. Put patient on a carrier.

PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Make transparencies.

   D. Discuss terminal and specific objectives.

   E. Discuss information and job sheets.

   F. Demonstrate procedures outlined on the job sheets.

   G. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to perform the procedures outlined on the job sheets.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1--Contractures Due to Faulty Bed Position

      2. TM 2--Patient Positions

      3. TM 3--Patient Positions (Continued)

4. TM 4--Patient Positions (Continued)

5. TM 5--One Type of Overhead Frame

D. Job sheets

1. Job Sheet #1--Perform Range-of-Motion Exercises

2. Job Sheet #2--Perform Range-of-Motion Exercises for the Patient

3. Job Sheet #3--Position the Patient

4. Job Sheet #4--Assist Patient to Dangle

5. Job Sheet #5--Get Patient Into a Chair and a Wheelchair

6. Job Sheet #6--Assist Patient to Walk

7. Job Sheet #7--Put Patient on a Carrier

E. Test

F. Answers to test

II. References:

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III. Filmstrips:

A. "Range-of-Joint Motion Exercises." Trainex Corporation.

B. "The Use of Protective Restraints." Trainex Corporation.

C. "Positioning to Prevent Contractures." Trainex Corporation.

D. "Lifting and Moving Patient." Trainex Corporation.

E. "Transfer Activities and Ambulation." Trainex Corporation.

F. "Use of Patient Lifters." Trainex Corporation.

PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

INFORMATION SHEET

I. Terms and definitions

A. Contracture--Abnormal shortening of a muscle, tendon, or scar tissue producing deformity or distortion which may become permanent

B. Atrophy--Decrease in size due to disuse, disease, injury, or weakness

C. Range-of-motion--Extent through which a joint can be extended and flexed

D. Passive range-of-motion--Health worker performs full range-of-motion exercises for the patient

E. Active range-of-motion--Patient performs exercises without assistance

F. Assisted range-of-motion--Patient exercises as much as he is able with the health worker assisting patient to complete full range

G. Isometrics--System of exercises in which opposing muscles are contracted in such a manner that there is little shortening but great increase in tone of muscles involved

H. Isometric exercise--Muscle is contracted as firmly as possible for ten seconds and then relaxed

(NOTE: Because isometric exercises raise the blood pressure, the decision to use them is made by the physician.)

I. Resistive exercise--Muscle is contracted in pushing or pulling against a stationary object, as in pushing the feet against a footboard

J. Recumbent--Lying down

K. Popliteal space--Pertaining to the posterior surface of the knee

L. Orthopnea--Respiratory condition in which breathing is possible only when the person sits or stands in an erect position

M. Decubitus ulcer--Lesion of the skin due to local interference with the circulation

N. Cerebrovascular accident--Sudden interruption of the blood supply to some vital center in the brain

(NOTE: It is also known as stroke or apoplexy.)

O. Paralysis--Loss or impairment of the ability to move parts of the body

INFORMATION SHEET

- P. Laceration-Wound produced by the tearing of body tissue
- Q. Postural hypotension-Low blood pressure which occurs on assuming an erect position or on prolonged standing
- R. Dependent edema-Abnormal accumulation of fluid in the tissues affecting most severely the lowermost portions of the body
- S. Hypostatic pneumonia-Lung inflammation caused by constantly remaining in the same position

II. Ways in which exercise promotes functioning of patient's body

- A. Preserves strength, tone, and elasticity of the muscles
- B. Helps prevent contractures
- C. Relieves areas of pressure; aids in preventing decubitus ulcers
- D. Stimulates appetite
- E. Aids elimination
- F. Promotes strength and hardness of bones
- G. Helps maintain blood pressure and efficient circulation
- H. Aids in preventing emboli, thrombi, and hypostatic pneumonia
- I. Reduces fatigue

III. Factors which alter mobility

- A. Loss or decrease through disease or injury

  Examples:

  1. Paralysis due to cerebrovascular accident, CVA
  2. Injury to the spinal cord severing the nerves
  3. Laceration of a muscle causing atrophy of muscle and nerve
  4. Disease of the skeletal system causing bones to be too weak to support muscle activity
  5. Loss of consciousness with decreased motor activity
  6. Conversion reaction such as limb paralysis for which no abnormal physiological cause can be found

INFORMATION SHEET

B. External curtailment

Examples:

1. Bed rest prescribed to permit healing of an affected part such as the heart after a heart attack
2. Immobilization because of a fracture requiring cast or traction
3. Limitation of movement due to mechanical equipment such as a respirator or heart monitor

C. Voluntary curtailment

Examples:

1. Response to temporary illness and/or pain
2. Temporary emotional or social instability causing one to withdraw temporarily
3. Response to environmental demands such as the cardiac patient who lives in a walk-up apartment and is no longer able to climb the stairs

IV. Development of contractures (Transparency 1)

(NOTE: As noted in the unit "The Muscular System," muscles work in pairs with one muscle contracting as its antagonist relaxes.)

A. Normal mobility is dependent upon the free movement of the joints and muscles

B. When joints and muscles are not used, the connective tissue fibers gradually become less pliable, a process called fibrosis

C. Fibrosis may begin to form in a week, beginning to restrict motion

D. If allowed to progress, fibrosis can lead to contracture and loss of mobility

E. Poor position in bed during prolonged bed rest may lead to deformed posture due to fibrosis and contractures (Transparency 1)

F. Contractures are very difficult to correct; treatment may require months or years of time or surgical correction

G. Contractures with permanent deformity can occur in as little as three weeks time

H. Prevention of contractures is the best treatment

INFORMATION SHEET

V. Additional effects of immobility

   A. Atrophy of muscles

   B. Decrease of joint mobility

   C. Softening of the bony tissue

   D. Impairment of nerve function

   E. Changes in sensory function

   F. Changes in behavior

   G. Decreased strength of respiratory muscles

   H. Changes in heart and circulatory functions

      (NOTE: Some changes may be increased heart rate, postural hypotension, dependent edema, formation of thrombi or emboli, and hypostatic pneumonia.)

   I. Metabolism changes

      (NOTE: These may include increased excretion of nitrogen or calcium, increased incidence of kidney stones, urinary retention, and constipation.)

   J. Changes in condition of skin and underlying tissues

      (NOTE: Changes may be due to difficulty in maintaining cleanliness and integrity of skin, to increased pressure on tissues, or to inadequate nourishment of the tissues.)

VI. Nursing measures to prevent or decrease effects of immobility

   A. Proper alignment of body--Natural body position and alignment aid in preventing malfunctioning

   B. Changing position--Relieves pressure, relocates internal secretions, and promotes muscle and joint movement

   C. Joint mobility exercises--Patient should be assisted when appropriate and encouraged to help himself exercise

   D. Environmental structuring--Introduction of variety into the patient's environment to prevent boredom and provide interest

VII. Types of activity or exercise for patients

   A. Range-of-motion exercises

INFORMATION SHEET

- B. Muscle-conditioning exercises
  - 1. Isometric exercise
  - 2. Resistive exercise
- C. Assisting patient to dangle
- D. Getting patient up in chair or wheelchair
- E. Assisting patient to walk
- F. Putting patient on a carrier

VIII. Body positions for the patient

- A. Horizontal recumbent or supine--Patient lies on his back with head and shoulders elevated slightly on a pillow (Transparency 2)
- B. Prone--Patient lies on his abdomen with head turned to one side (Transparency 2)
- C. Lateral--Patient lies on his side with both arms forward, knees and hips flexed (Transparency 2)
- D. Fowler's--Head of bed is elevated to forty-five degrees or more; knees are elevated as necessary to maintain position (Transparency 2)
- E. Dorsal recumbent--Patient lies on his back with his knees flexed (Transparency 3)
- F. Sims' or semi-prone--Patient is between lateral and prone positions with lower arm behind him and upper arm flexed at shoulder and elbow; upper leg is flexed more than lower leg (Transparency 3)
- G. Trendelenburg--Patient lies on back with foot of the bed elevated on blocks at a forty-five degree angle (Transparency 3)

  (NOTE: In Trendelenburg and Fowler's positions the foot or head of the bed may be raised on blocks by a mechanical jack or lifter or placed on a chair.)
- H. Knee-chest--Patient kneels with buttocks upward, chest and head resting on bed (Transparency 4)
- I. Lithotomy--Patient lies on his back, hips flexed and slightly abducted; knees acutely flexed; legs may be placed in leg-holders or feet in stirrups (Transparency 4)
- J. Orthopneic--Patient sits with head and arms on a pillow on the overbed table, knees elevated for comfort (Transparency 4)

INFORMATION SHEET

IX. Devices for the therapeutic comfort of the patient confined to bed

  A. Mattress variations

    1. Foam--Made of foam rubber

    2. Split--Usually made of foam with a short center section which can be removed to insert a bedpan

    3. Alternating pressure mattress--Areas of the mattress are alternately inflated and deflated by a small motor so there is a continual change of pressure upon the patient's body

    (CAUTION: Mattress is made of plastic and is easily punctured by sharp instruments such as pins.)

    4. Water or gel-filled--Plastic filled with water or thick jelly-like substance

    (CAUTION: Avoid puncturing.)

  B. Cradle

  C. Footboard or footblock

  D. Bedboard or fracture board

  E. Balkan or overhead frame (Transparency 5)

  F. Bradford frame

  G. Air rings or cushions

  H. Elbow or heel protectors

  I. Trochanter roll

  J. Sponge rubber pads or small pillows

  K. Sandbags

  L. Sheepskin

X. Maintaining the safety of the bed patient

  A. Use safety devices as needed to protect the patient

  B. Medications should be stored out of reach of patients who are not responsible

  C. Smoking and use of matches and lighters by patients should be carefully controlled

  D. Be familiar with emergency care equipment and procedures

INFORMATION SHEET

E. Equipment and belongings which the patient needs should be kept within his reach

F. When using hot or cold applications, patient must be checked frequently

G. Bed linen must be kept clean, dry, and wrinkle-free to minimize pressure areas

H. Casters must be locked to prevent bed from rolling and turned inward to prevent tripping over them

I. Gatch handles should be in folded position to avoid jarring the bed or injuring health personnel

J. Use electrical equipment carefully; patient should be watched closely when electrical appliances are being used

XI. Safety devices for patients confined to bed

A. Side rails

1. Used to keep patient from falling out of bed

2. Assist patients in moving and turning

(NOTE: Since policies concerning use of side rails vary greatly, check with the person in charge about their use.)

B. Safety jacket-Used for confused or disturbed patients to prevent them from trying to get out of bed

C. Wrist, arm, or leg restraints

1. May be used to remind a patient not to move a part during treatment or administration of an intravenous infusion

2. When used to restrain a patient in bed, extra care is needed to change patient's position and to see that circulation is not hampered

D. Mittens-May be used to prevent a patient from removing dressings, catheters, or other treatment devices

XII. Precautions to observe when using devices that restrict movement

A. When side rails are being used, go no further than an arm's length from the bed without raising the side rails

B. Make the patient as comfortable as possible with good body alignment before applying any restraining device

INFORMATION SHEET

C. Pad all restraining appliances carefully to avoid pressure and chafing; watch to see that the padding does not slip out of place

D. Restraining devices should be loosened every two hours and patient's position changed

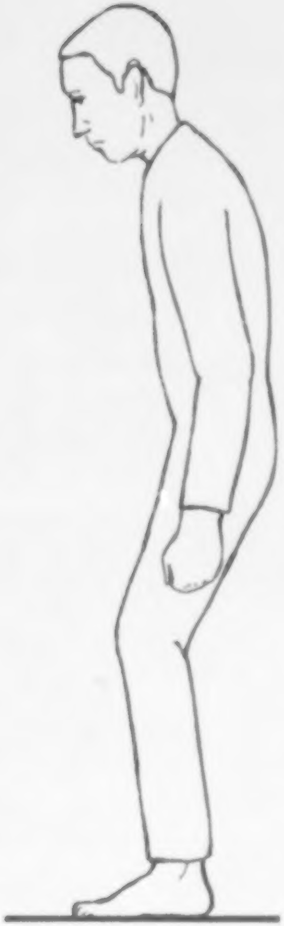
E. Circulation of the restrained limbs should be watched closely; if the limb is restrained improperly or too tightly, circulation may be impaired

F. Check pulse and respirations frequently to see that respirations and circulation are not hampered

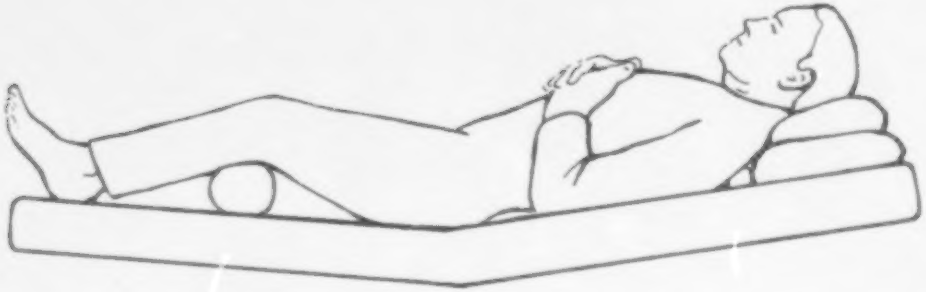
G. When lock-type restraints are used, the keys must be kept in a designated place readily available to personnel

H. In most institutions, restraining devices are used upon the order of the attending physician or when, in the judgment of the charge nurse, they become necessary

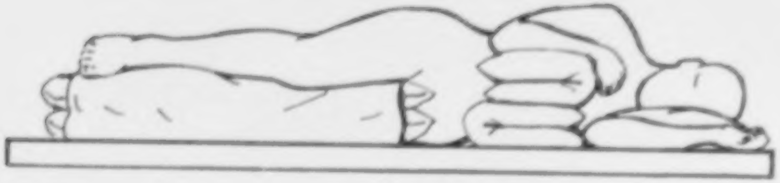
Contractures Due to Faulty Bed Position



Poor Posture During Prolonged Bedrest
May Lead to Deformed Posture.

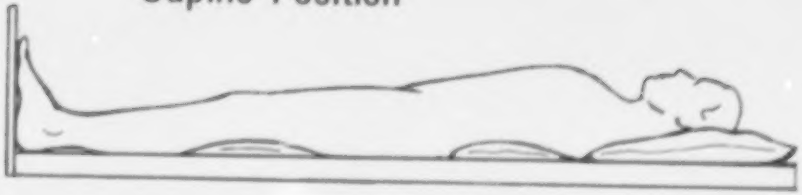


Patient Positions

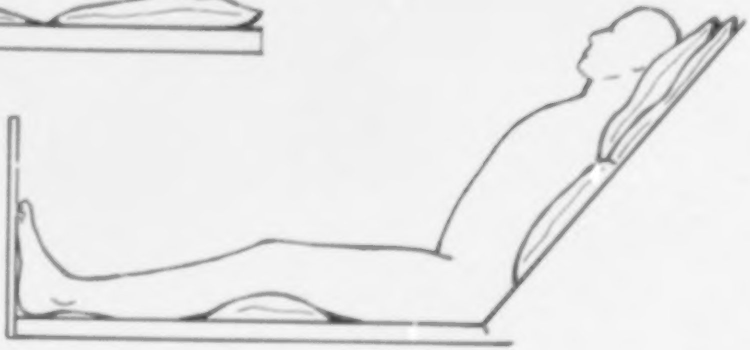


Lateral Position

Supine Position

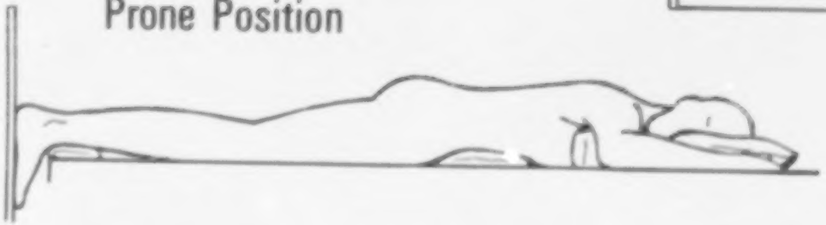


Fowler's Position



NOTE: Bend of hips at bend of mattress.

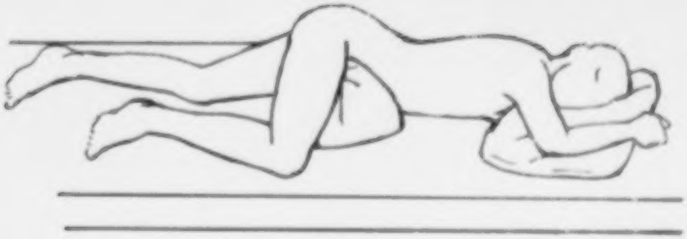
Prone Position

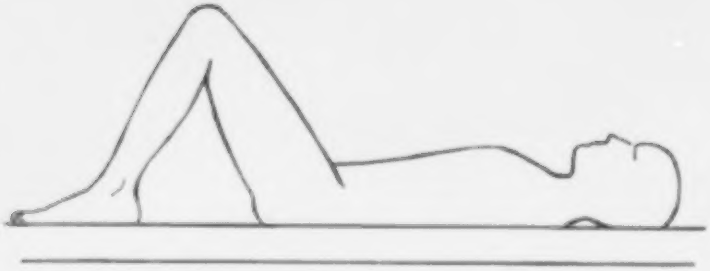


Patient Positions

(Continued)

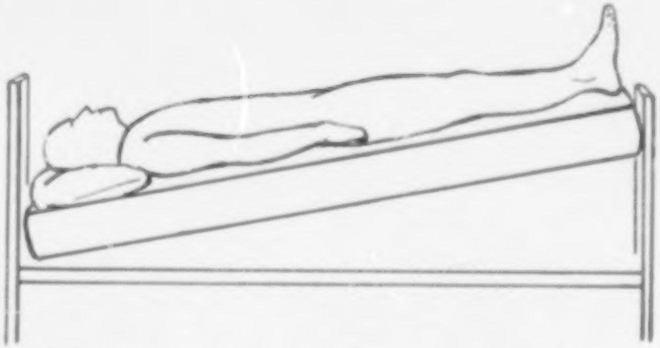
Sim's Position





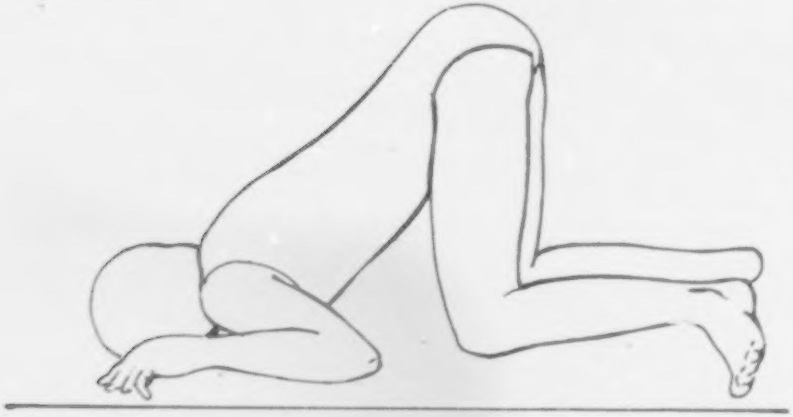
Dorsal Recumbent Position

Trendelenburg Position

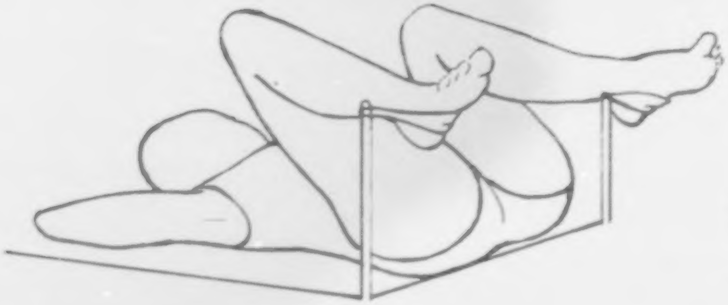


Patient Positions

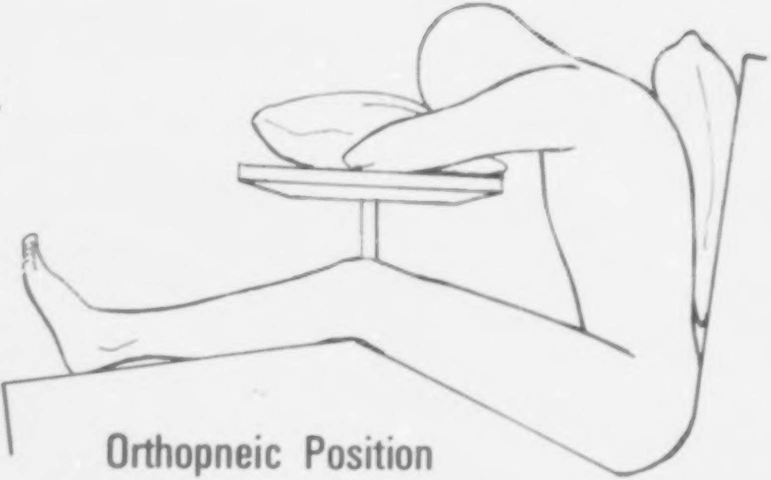
(Continued)



Knee-Chest Position

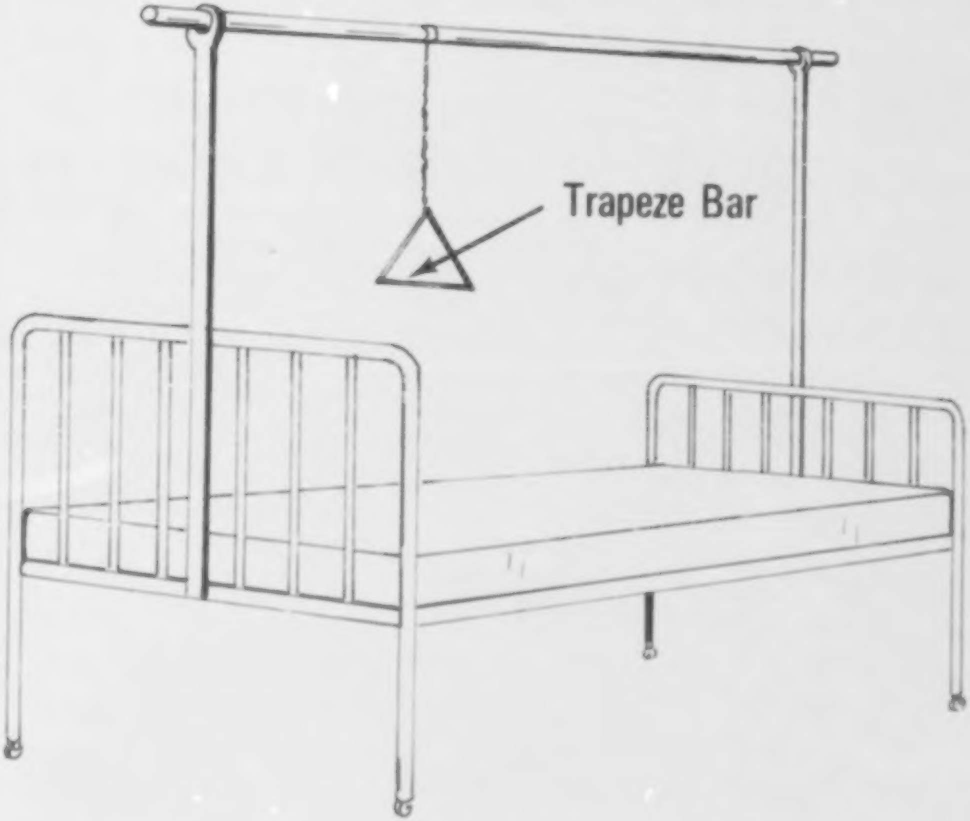


Lithotomy Position



Orthopneic Position

One Type of Overhead Frame


Trapeze Bar

N. I - 213-B

PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

JOB SHEET #1–PERFORM RANGE-OF-MOTION EXERCISES

(NOTE: In order to perform range-of-motion exercises for the patient, it is important for the student to practice them. By doing them one will be better able to move the patient in a normal manner without causing pain or injury.)

I. Exercising upper extremities

A. Neck

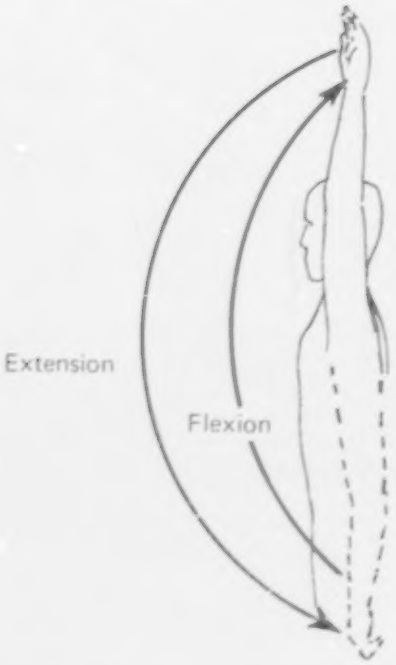
1. Bend head and neck forward until the chin touches the chest, lift head up and bend back, and return to starting position (flexion and extension)

2. Turn head to left and then to right (rotation)

B. Shoulders

1. Lift arm forward, up over the head, and return to side (flexion and extension) (Figure 1)

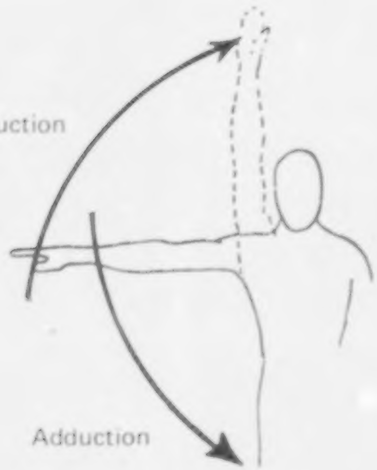
FIGURE 1



JOB SHEET #1

2. Lift arm up and out to the side until it is over the head; return to the side (abduction and adduction) (Figure 2)

FIGURE 2



3. Flex the elbow, bring the elbow up to the level of the shoulder, and reach the back of your neck with your fingers (external or outward rotation)

4. Flex the elbow, draw your arm across your chest, and touch the other shoulder (internal or inward rotation)

C. Elbow--Bend the elbow to touch the shoulder with your fingertips; straighten elbow (flexion and extension)

D. Wrist

1. Bend palm side of hand down toward arm and then back (flexion and extension)

2. Bend wrist from side to side

E. Fingers

1. Bend fingers to make a fist; then straighten fingers (flexion and extension)

2. Spread fingers fanwise and bring together (abduction and adduction)

3. Touch thumb into palm and extend out straight (flexion and extension)

4. Touch tips of each finger with thumb (opposition)

JOB SHEET #1

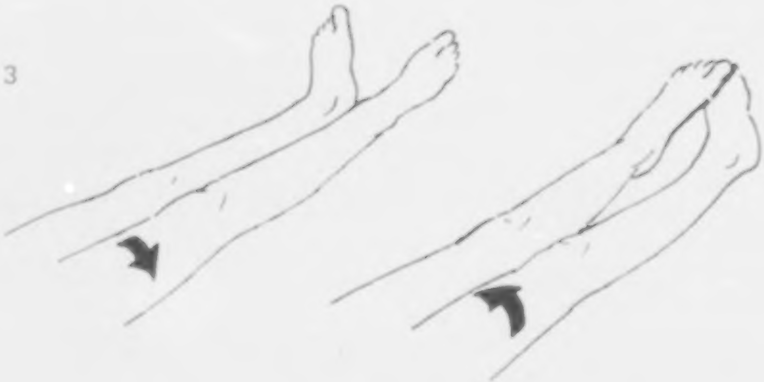
II. Exercising the trunk

- A. In dorsal recumbent position, slowly raise trunk to sitting position and return (flexion and extension)
- B. In sitting position with hands behind head, bend to the left and then to the right (lateral flexion)
- C. In same position, rotate upper body to the left and to the right (rotation)

III. Exercising lower extremities-These exercises should be done in the supine or recumbent position

- A. Hip
  1. With legs straight and toes pointing up, move leg out to side and return (abduction and adduction)
  2. Keeping knee straight, turn legs so toes point inward then outward (internal and external rotation) (Figure 3)

FIGURE 3



External Rotation Internal Rotation

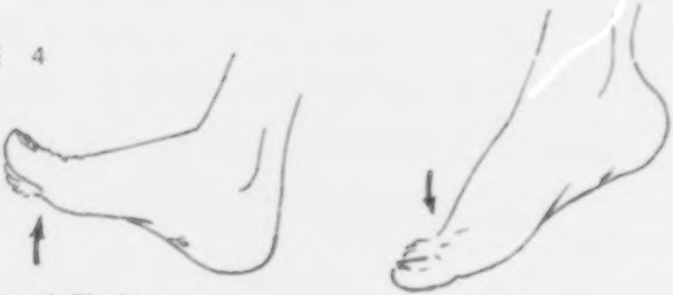
- B. Knee and hip-Bend knee bringing it as close to chest as possible; return to starting position (flexion and extension) ..

JOB SHEET #1

C. Ankle

1. Bend foot up toward leg and down away from leg (dorsal flexion and plantar flexion) (Figure 4)

FIGURE 4



Dorsal Flexion

Plantar Flexion

2. Move ankle in circle (rotation)

PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

JOB SHEET #2-PERFORM RANGE-OF-MOTION EXERCISES FOR THE PATIENT

(NOTE: In the classroom with another student playing the part of a patient who is unable to move the right side of his body due to paralysis, provide range-of-motion exercises for all joints on the affected side. Support the dependent part of the extremity being exercised and avoid range-of-motion beyond the point of pain.)

I. Preparation

   A. Adjust the bed to a comfortable working height with the patient in supine position; move the patient close to edge of the bed nearest his affected side

   B. Replace top bedding with a bath blanket or cover to avoid exposure of the part of the body not being exercised

   C. Use principles of proper alignment and body mechanics to avoid excessive fatigue for patient and nurse

II. Exercising

   A. Neck

      1. Supporting the patient's head with your hands, flex his neck by bringing his head forward until his chin touches his chest; return his head to the pillow

      2. Rotate the head by gently turning to one side and then the other

   B. Shoulder

      1. Cup patient's elbow in right hand, grasp his wrist with the left hand

      2. Move patient's arm straight up over his head, keeping the arm toward the midline (flexion)

      3. Flex elbow over his head if space does not permit keeping elbow straight

      4. Reverse procedure, returning arm to starting position (extension)

      5. With patient' arm close to his side, cup his elbow with right hand, cradling his lower arm, use left hand to hold shoulder from elevating

JOB SHEET #2

6. Keep patient's arm at bed level and move it out to the side to a ninety-degree angle (abduction)

7. Return arm to starting position (adduction)

8. Abduct patient's arm at shoulder to ninety degrees, bend elbow to ninety degrees; support patient's wrist with your right hand and patient's elbow with your left hand; bring the forearm toward the bed, palm down (internal rotation)

9. Bring forearm toward bed palm up keeping shoulder and elbow at ninety-degree angle throughout (external rotation)

C. Elbow

1. With patient's arm at his side, palm up, bend the elbow, moving his hand toward his shoulder (flexion)

2. Straighten the arm (extension)

3. Grasp the patient's hand as if to shake hands, stabilize wrist, and turn the patient's palm up (supination)

4. Turn patient's palm down (pronation)

D. Wrist

1. Flex the patient's elbow, supporting his forearm with your left hand and his hand with your right hand

2. Bend the wrist forward (flexion)

3. Bend the wrist backward (extension)

4. Bend patient's wrist toward his little finger (abduction)

5. Bend his wrist toward his thumb (adduction)

E. Fingers

1. Support patient's wrist with left hand

2. Cup right hand over the back of the patient's hand

3. Beginning with the fingertips, bend the patient's hand down to form a fist (flexion)

4. Straighten the fingers (extension)

JOB SHEET #2

5. Place patient's hand in prone position on the bed

6. Move each finger away from the middle finger and return (abduction and adduction)

7. Place hand in supine position, flex thumb into palm, and then extend it (flexion and extension)

8. Supporting the fingers as needed, move patient's thumb to touch the tips of each finger and return to normal (opposition)

F. Hip and knee

1. Place left hand under patient's knee and cup heel with right hand, stabilizing the ankle

2. Lift his leg and bend the knee moving his leg toward his chest as far as possible without causing pain (flexion)

3. Lower leg to bed (extension)

4. Supporting knee and ankle and holding leg straight, move patient's leg out to the side and back (abduction and adduction)

5. With the patient's leg resting on the bed, place one hand on his knee and one on his ankle; roll the entire leg inward, then outward (rotation)

G. Ankle and foot

1. Holding ankle with one hand and foot with the other, pull the toes up toward the knee and then push them down (dorsal flexion and plantar flexion)

2. Rotate the ankle by holding the ankle with one hand and turning the foot in, then out (rotation)

III. Adjust patient's bed for comfort; replace top covers

IV. Report and record procedure and observations

PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

JOB SHEET #3-POSITION THE PATIENT

I. Equipment needed

   A. Bed made as for an occupied bed

   B. Pillows as needed

   C. Footrest or footboard

   D. Extra linens such as towels or bath blankets to use for support

   E. Sandbags as needed

   F. Handrolls

II. Procedure

   A. Horizontal recumbent or supine position

      1. Place pillow under shoulder and head

      2. Place folded towel or small, firm pillow under lower back

         (NOTE: Pillow is placed under natural curve of patient's back. Check by putting hand under back to determine placement.)

      3. Maintain slight flexion of knees by putting folded towels or other linen under thighs just superior to the popliteal space

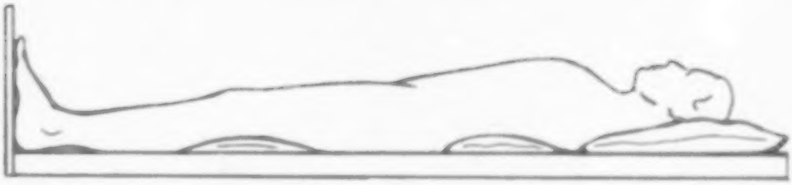
      4. Support feet with footrest or covered box to prevent plantar flexion

      5. If necessary, use rolled towels or sandbags at the lateral aspects of the thighs to prevent outward rotation of the legs

      6. When footrest is not used, be sure bedcovers over feet are loosened to prevent plantar flexion

JOB SHEET #3

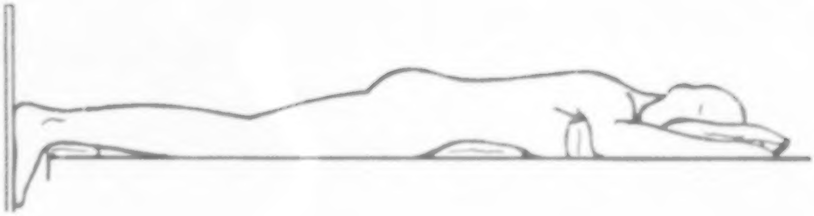
7. Use handrolls and support arms with pillows as needed to prevent contractures



B. Prone position

1. Move patient to one side of bed
2. Turn patient onto side facing the center of the bed
3. For the female patient, place small pillow below the breasts; for the male patient, place small pillow under lower abdomen
4. Turn patient onto abdomen
5. Position arms; arm at back of head lies parallel to body with elbow flexed slightly; arm at face side is flexed at right angle
6. Place small pillow under patient's head if desired
7. Place pillow under ankles to keep weight of legs off toes

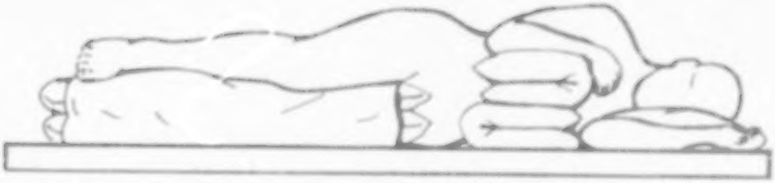
   (NOTE: Patient may be positioned so feet hang off the edge of the mattress. Use small folded linen under ankles to relieve strain.)



JOB SHEET #3

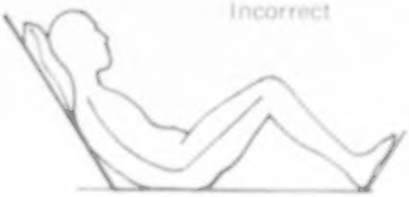
C. Lateral position

1. Turn patient onto side and move near the center of the bed
2. Fold a pillow lengthwise and tuck along patient's back to keep patient from rolling backward
3. Place small pillow under patient's head
4. Flex upper leg to comfortable position; leave lower leg straight or flex slightly as desired for comfort
5. Place folded blanket or firm pillow under upper leg and foot
6. Flex lower arm at right angle at shoulder and elbow
7. Place folded pillow under upper arm



D. Fowler's position

1. Place patient in supine position
2. Check to see that bend of hips is at the bend of the mattress



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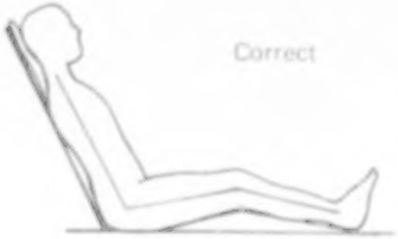

Correct

3. Elevate the head of the bed between 15° and 60°

JOB SHEET #3

4. Place the body parts in good alignment

5. Provide support for the body parts

   (NOTE: Use knee rest, footboard, trochanter rolls, sandbags, and/or pillows to support and maintain position.)

6. Bedcovers over feet should be loose if footrest is not used

E. Sims' or semi-prone

1. Turn patient on side

2. Place small pillow under head

3. Align the body in good position

   a. Head, neck, and back should be in a straight line

   b. Support and lift lower shoulder and flex lower arm behind patient

   c. Flex lower leg slightly

4. Flex uppermost leg and support with pillow under knee, lower leg, and ankle

5. Flex upper arm and support with pillow as needed

F. Knee-chest position

1. Turn patient onto abdomen

2. Replace top covers with bath blanket

3. Fanfold, keeping top covers down with lower legs covered

4. Help patient into kneeling position with chest and head resting on bed

5. Tuck bath blanket around patient's thighs leaving center free to be raised during examination

G. Lithotomy

1. Place patient in supine position

2. Replace top covers with bath blanket

3. Flex patient's hips while abducting them

4. Acutely flex knees

JOB SHEET #3

5. Tuck bath blanket corners around patient's feet and legs leaving center free to be raised during examination

   (NOTE: If the position is to be maintained for any length of time, it may be necessary for two people to support the patient's legs in the proper position.)

PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

JOB SHEET #4--ASSIST PATIENT TO DANGLE

(NOTE: This procedure is usually performed as the initial getting-up activity for a patient who has been ill or had surgery. The patient may be apprehensive and fearful of pain. Observe for signs of weakness or syncope.)

I. In the classroom with another student playing the part of a patient, assist a patient to dangle

II. Procedure

   A. Wash hands

   B. Identify patient and explain procedure

   C. Check pulse

   D. Move the patient to the side of the bed; if there is an injury or weakness, work from the side near the weakness

   E. Place bed in low position

   F. Elevate the head of the bed to help adjust the patient to a sitting position

   G. Assist patient to upright position with your hands on his shoulders

   H. While continuing to support one shoulder with your hand, move other hand to the opposite knee and pivot the patient with his legs down over the side of the bed .

   I. Provide for patient's comfort and warmth

      1. Put on slippers and place feet on footstool if his feet do not reach the floor

      2. Put on his robe or cover his shoulders and back with a bath blanket

      3. Place a blanket over his legs

   J. Check pulse

   K. Watch closely for signs of weakness or fatigue

JOB SHEET #4

L. Assist patient in returning to bed at the end of the specified period of dangling or sooner if he is unable to tolerate the procedure

    1. Remove robe and slippers
    2. Support the patient's shoulders with one hand; with the other hand under his ankles, swing his legs up onto the bed pivoting his body at the same time
    3. Ease the patient down to the backrest

M. Check pulse

N. Provide for the patient's comfort

    1. Adjust top covers
    2. Adjust bed position and pillows
    3. Place communication device within reach

O. Wash hands

P. Report and record procedure and observations

PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

JOB SHEET #5-GET PATIENT INTO A CHAIR AND A WHEELCHAIR

I. Procedure for getting patient into a chair

A. Wash hands

B. Identify patient and explain procedure

C. Check pulse

D. Lower bed or place footstool beside bed

E. Assist the patient to a sitting position with feet on footstool or floor

F. Place chair at the side of the bed with its back toward the foot of the bed

G. Assist patient in putting on robe and slippers

H. With broad base of support, stand directly in front of and facing patien

I. Have the patient place his hands on your shoulders; place your hands on each side of the patient below his armpits

J. As the patient steps to the floor, support and turn him with his back to the chair

K. As the patient sits, bend your knees while easing him down to the chair

L. Cover legs with blanket

M. Check pulse

N. Place communication device within patient's reach

O. Reverse procedure to return patient to bed

P. Check pulse

Q. Provide for patient's comfort; return equipment to proper place

R. Report and record procedure and observations

JOB SHEET #5

II. Procedure for getting patient into a wheelchair

  A. Follow procedure above substituting wheelchair for the chair

  B. Position wheelchair and LOCK the wheels; if they cannot be locked, have someone hold the chair in place

  C. Fold back footrests so patient will not step on them and tip the chair

  D. Secure patient in wheelchair

PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

JOB SHEET #6--ASSIST PATIENT TO WALK

(NOTE: Observe for signs of weakness or syncope throughout procedure.)

Procedure:

A. Wash hands

B. Identify patient and explain procedure

C. Check pulse

D. Place bed in low position or provide a footstool

E. Elevate head of bed; fold down top bedding

F. Assist patient to a sitting position on the side of the bed

G. Assist patient in putting on robe and slippers

(NOTE: Slippers should fit well. Loose, floppy shoes or shoes with slippery soles are difficult and may be dangerous for a weakened patient to walk in.)

H. Check pulse

I. Help the patient to stand

1. Have the patient place his feet firmly on the floor or footstool and push down on the mattress with his hands to slide forward to the edge of the bed

2. Support his movements by placing one hand under his axilla, helping him to stand

3. Standing in front of the patient, hold his arm or shoulder to aid him in balancing

J. Assist patient in walking

1. Encourage patient to stand straight as he walks

2. For minimal support, have the patient hold onto your arm

3. For moderate support, hold the patient's left hand in your left hand with your right arm holding him around the waist

4. For more than moderate support, have another person support the patient on the other side or provide a chair to slide along in front of him

JOB SHEET #6

K. To assist the patient in returning to bed, reverse the procedure

L. Check pulse

M. Provide for patient's comfort; place communication device within reach

N. Wash hands

O. Report and record the procedure and observations

PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

JOB SHEET #7--PUT PATIENT ON A CARRIER

I. Procedure with a patient who can help

- A. Replace top covers with a bath blanket
- B. Place carrier close to the bed and parallel with it
- C. Lock the wheels of the bed and the carrier
- D. Steady the carrier and assist the patient to move onto it
- E. Place pillow under head
- F. Adjust bath blanket to cover patient
- G. Secure safety devices; caution patient to keep his arms close to his body
- H. Transport feet first at moderate speed
- I. Remain at head of carrier during transportation, observing patient for reaction

II. Procedure for a helpless patient--Requires three people

- A. Replace top covers with a bath blanket
- B. Loosen drawsheet on both sides
- C. Roll drawsheet close to patient on carrier side
- D. Using drawsheet, pull patient close to edge of bed
- E. Place carrier parallel to bed; lock wheels on carrier and bed
- F. First person puts one arm under patient's head and grasps top corner of drawsheet with other hand
- G. Second person grasps drawsheet above and below patient's buttocks
- H. Third person grasps lower corner of drawsheet and places other arm under patient's legs
- I. At prearranged signal the patient is pulled onto the carrier
- J. Roll both sides of drawsheet close to patient's body
- K. Adjust bath blanket and pillow

JOB SHEET #7

L. Secure safety devices

III. Procedure for three-man lift

A. Replace top covers with bath blanket folded close to patient

B. Place carrier at right angles to the patient's bed

C. To coordinate movements, the three persons must work by prearranged signals called by the person who moves the patient's head

D. At the count of "one" the three people, observing proper body mechanics, bend their knees and place their arms under the patient

1. The first person places one arm under the neck and shoulders and the other arm under the patient's back

2. The second person places one arm under the small of the back and the other arm under the buttocks

3. The third person places one arm just below the buttocks and the other arm under the legs

E. At the count of "two" the three persons rock back and simultaneously lift and roll the patient to their chests

F. At the count of "three" they rise, step back, and pivot toward the stretcher

G. At the count of "four" they bend their knees and rest their elbows on the stretcher

H. At the count of "five" each lifter extends his arms allowing the patient to roll onto his back on the stretcher

I. At the count of "six" each lifter withdraws his arms

J. Adjust bath blanket to cover patient

K. Secure safety devices

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PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

TEST

1. Match the terms on the right to the correct definition. (Answers to "a" through "j" are on this page.)

______a. Extent through which a joint can be extended and flexed

______b. Patient exercises as much as he is able with the health worker assisting patient to complete full range

______c. Patient performs exercises without assistance

______d. System of exercises in which opposing muscles are contracted in such a manner that there is little shortening but great increase in tone of muscles involved

______e. Respiratory condition in which breathing is possible only when the person sits or stands in an erect position

______f. Muscle is contracted in pushing or pulling against a stationary object, as in pushing the feet against a footboard

______g. Lesion of the skin due to local interference with the circulation

______h. Sudden interruption of the blood supply to some vital center in the brain

______i. Lying down

______j. Loss or impairment of the ability to move parts of the body

1. Isometrics
2. Recumbent
3. Decubitus ulcer
4. Paralysis
5. Orthopnea
6. Active range-of-motion
7. Cerebrovascular accident
8. Range-of-motion
9. Resistive exercise
10. Assisted range-of-motion

(NOTE: Answers to "k" through "s" are on this page.)

_____k. Wound produced by the tearing of body tissue

_____l. Low blood pressure which occurs on assuming an erect position or on prolonged standing

_____m. Abnormal accumulation of fluid in the tissues affecting most severely the lowermost portions of the body

_____n. Lung inflammation caused by constantly remaining in the same position

_____o. Health worker performs full range-of-motion exercises for the patient

_____p. Abnormal shortening of a muscle, tendon, or scar tissue producing deformity or distortion which may become permanent

_____q. Decrease in size due to disuse, disease, injury, or weakness

_____r. Pertaining to the posterior surface of the knee

_____s. Muscle is contracted as firmly as possible for ten seconds and then relaxed

11. Contracture
12. Isometric exercise
13. Popliteal space
14. Atrophy
15. Postural hypotension
16. Dependent edema
17. Laceration
18. Hypostatic pneumonia
19. Passive range-of-motion

2. List six ways in which exercise promotes the functioning of the patient's body.

a.

b.

c.

d.

e.

f.

3. List two examples of each of the three factors which alter mobility.
   a. External curtailment
      1)
      2)
   b. Loss or decrease through disease or injury
      1)
      2)
   c. Voluntary curtailment
      1)
      2)
4. Discuss the development of contractures.

5. List eight possible effects of immobility besides contractures.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

6. List three nursing measures which prevent or decrease the effects of immobility.

   a.

   b.

   c.

7. List four types of activity or exercise for patients.

   a.

   b.

   c.

   d.

8. Match the body position on the right to the correct description.

_____a. Patient lies on his back with head and shoulders elevated slightly on a pillow

_____b. Patient lies on his abdomen with head turned to one side

_____c. Patient lies on his side with both arms forward, knees and hips flexed

_____d. Patient lies on his back with his knees flexed

_____e. Patient is between lateral and prone positions with lower arm behind him and upper arm flexed at shoulder and elbow; upper leg is flexed more than lower leg

_____f. Head of bed is elevated to forty-five degrees or more; knees are elevated as necessary to maintain position

_____g. Patient lies on his back, hips flexed and slightly abducted; knees acutely flexed; legs may be placed in leg-holders or feet in stirrups

_____h. Patient sits with head and arms on a pillow on an overbed table, knees elevated for comfort

_____i. Patient lies on back with foot of bed elevated on blocks at a forty-five degree angle

_____j. Patient kneels with buttocks upward, chest and head resting on bed

1. Lithotomy
2. Fowler's
3. Orthopneic
4. Prone
5. Horizontal recumbent or supine
6. Trendelenburg
7. Sims' or semi-prone
8. Lateral
9. Knee-chest
10. Dorsal recumbent

9. List ten devices which may be used for the therapeutic comfort of patients confined to bed.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

   i.

   j.

10. List eight ways of maintaining the safety of the bed patient.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

11. List three safety devices for patients confined to bed and one instance in which each device might be used.

   a.

   b.

   c.

12. List six precautions to observe when using devices that restrict movement.

a.

b.

c.

d.

e.

f.

13. Demonstrate the ability to:

a. Perform range-of-motion exercises.

b. Perform range-of-motion exercises for the patient.

c. Position the patient.

d. Assist patient to dangle.

e. Get patient into a chair and a wheelchair.

f. Assist patient to walk.

g. Put patient on a carrier.

(NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

PATIENT MOVEMENT AND ACTIVITY
UNIT VIII

ANSWERS TO TEST

1.

a.	8	f.	9	k.	17	p.	11
b.	10	g.	3	l.	15	q.	14
c.	6	h.	7	m.	16	r.	13
d.	1	i.	2	n.	18	s.	12
e.	5	j.	4	o.	19		

2. Any six of the following

   a. Preserves strength, tone, and elasticity of the muscles

   b. Helps prevent contractures

   c. Relieves areas of pressure; aids in preventing decubitus ulcers

   d. Stimulates appetite

   e. Aids elimination

   f. Promotes strength and hardness of bones

   g. Helps maintain blood pressure and efficient circulation

   h. Aids in preventing emboli, thrombi, and hypostatic pneumonia

   i. Reduces fatigue

3. a. External curtailment

   Any two of the following

   1) Bed rest prescribed to permit healing of an affected part such as the heart after a heart attack

   2) Immobilization because of a fracture requiring cast or traction

   3) Limitation of movement due to mechanical equipment such as a respirator or heart monitor

b. Loss or decrease through disease or injury

Any two of the following

1) Paralysis due to cerebrovascular accident, CVA

2) Injury to the spinal cord severing the nerves

3) Laceration of a muscle causing atrophy of muscle and nerve

4) Disease of the skeletal system causing bones to be too weak to support muscle activity

5) Loss of consciousness with decreased motor activity

6) Conversion reaction such as limb paralysis for which no abnormal physiological cause can be found

c. Voluntary curtailment

Any two of the following

1) Response to temporary illness and/or pain

2) Temporary emotional or social instability causing one to withdraw temporarily

3) Response to environmental demands such as the cardiac patient who lives in a walk-up apartment and is no longer able to climb the stairs

4. Discussion should include:

a. Normal mobility is dependent upon the free movement of the joints and muscles

b. When joints and muscles are not used, the connective tissue fibers gradually become less pliable, a process called fibrosis

c. Fibrosis may begin to form in a week, beginning to restrict motion

d. If allowed to progress, fibrosis can lead to contracture and loss of mobility

e. Poor position in bed during prolonged bed rest may lead to deformed posture due to fibrosis and contractures

f. Contractures are very difficult to correct; treatment may require months or years of time or surgical correction

g. Contractures with permanent deformity can occur in as little as three weeks time

h. Prevention of contractures is the best treatment

5. Any eight of the following
    a. Atrophy of muscles
    b. Decrease of joint mobility
    c. Softening of the bony tissue
    d. Impairment of nerve function
    e. Changes in sensory function
    f. Changes in behavior
    g. Decreased strength of respiratory muscles
    h. Changes in heart and circulatory functions
    i. Metabolism changes
    j. Changes in condition of skin and underlying tissues
6. Any three of the following
    a. Proper alignment of body--Natural body position and alignment aid in preventing malfunctioning
    b. Changing position--Relieves pressure, relocates internal secretions, and promotes muscle and joint movement
    c. Joint mobility exercises--Patient should be assisted when appropriate and encouraged to help himself exercise
    d. Environmental structuring--Introduction of variety into the patient's environment to prevent boredom and provide interest
7. Any four of the following
    a. Range-of-motion exercises
    b. Muscle-conditioning exercises
        1) Isometric exercise
        2) Resistive exercise
    c. Assisting patient to dangle
    d. Getting patient up in chair or wheelchair
    e. Assisting patient to walk
    f. Putting patient on a carrier

8. a. 5
   b. 4
   c. 8
   d. 10
   e. 7
   f. 2
   g. 1
   h. 3
   i. 6
   j. 9

9. Any ten of the following

   a. Mattress variations
   b. Cradle
   c. Footboard or footblock
   d. Bedboard or fracture board
   e. Balkan or overhead frame
   f. Bradford frame
   g. Air rings or cushions
   h. Elbow or heel protectors
   i. Trochanter roll
   j. Sponge rubber pads or small pillows
   k. Sandbags
   l. Sheepskin

10. Any eight of the following

   a. Use safety devices as needed to protect the patient
   b. Medications should be stored out of reach of patients who are not responsible
   c. Smoking and use of matches and lighters by patients should be carefully controlled
   d. Be familiar with emergency care equipment and procedures
   e. Equipment and belongings which the patient needs should be kept within his reach
   f. When using hot or cold applications, patient must be checked frequently
   g. Bed linen must be kept clean, dry, and wrinkle-free to minimize pressure areas
   h. Casters must be locked to prevent bed from rolling and turned inward to prevent tripping over them

i. Gatch handles should be in folded position to avoid jarring the bed or injuring health personnel

j. Use electrical equipment carefully; patient should be watched closely when electrical appliances are being used

11. Any three of the following and one instance for each

a. Side rails

1) Used to keep patient from falling out of bed

2) Assist patients in moving and turning

b. Safety jacket--Used for confused or disturbed patients to prevent them from trying to get out of bed

c. Wrist, arm, or leg restraints

1) May be used to remind a patient not to move a part during treatment or administration of an intravenous infusion

2) When used to restrain a patient in bed, extra care is needed to change patient's position and to see that circulation is not hampered

d. Mittens--May be used to prevent a patient from removing dressings, catheters, or other treatment devices

12. Any six of the following

a. When side rails are being used, go no further than an arm's length from the bed without raising the side rails

b. Make the patient as comfortable as possible with good body alignment before applying any restraining device

c. Pad all restraining appliances carefully to avoid pressure and chafing; watch to see that the padding does not slip out of place

d. Restraining devices should be loosened every two hours and patient's position changed

e. Circulation of the restrained limbs should be watched closely; if the limb is restrained improperly or too tightly, circulation may be impaired

f. Check pulse and respirations frequently to see that respirations and circulation are not hampered

g. When lock-type restraints are used, the keys must be kept in a designated place readily available to personnel

h. In most institutions, restraining devices are used upon the order of the attending physician or when, in the judgment of the charge nurse, they become necessary

13. Performance skills will be evaluated to the satisfaction of the instructor.

NUTRITION AND FLUIDS
UNIT IX

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to prepare the patient and his surroundings for a meal, serve food trays, and assist patients in eating. The student should be able to report and record accurately the food and fluid intake of each patient assisted. This knowledge will be evidenced by evaluation in the clinical area and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with nutrition and fluids to the correct definition.
2. Describe before meal care.
3. List four points to remember in preparation and serving of the patient's tray.
4. Discuss assisting the patient at mealtime.
5. List eight points to remember when feeding a patient.
6. Discuss the observation of fluid intake.
7. List four things to do in after meal care.
8. Discuss the importance of fluids.
9. List three ways of administering fluids.
10. List five ways fluid is lost from the body.
11. List five influences on the amount of urine secreted.
12. List four symptoms of edema.
13. List four symptoms of dehydration.
14. Discuss measurement of oral intake.
15. List at least nine fluids which must be measured when keeping an accurate oral intake.
16. List three fluids measured for output.
17. Discuss points to remember when measuring intake and output.
18. Demonstrate the ability to measure liquids in various containers.

NUTRITION AND FLUIDS
UNIT IX

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information and assignment sheets.

   E. Provide hospital serving dishes and graduate to use for assignment sheet.

   F. Provide "Intake and Output Record" and discuss its use.

   G. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Complete assignment sheet.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Assignment Sheet #1--Measure Intake

   D. Test

   E. Answers to test

II. References:

A. Mitchell, Pamela H. *Concepts Basic to Nursing.* New York: McGraw-Hill Book Company, 1973.

B. Rapier, Dorothy K., et. al. *Practical Nursing* St. Louis: Missouri: The C. V. Mosby Company, 1970.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. Wood, Lucile A. *Nursing Skills for Allied Health Services.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1972.

III. Filmstrips:

A. "Feeding the Patient." Trainex Corporation.

B. "Intake and Output." Trainex Corporation.

NUTRITION AND FLUIDS
UNIT IX

INFORMATION SHEET

I. Terms and definitions

A. Intake and output--Accurate record of all liquids taken by a patient and accurate measurement of all urine, vomitus, drainage, or other liquid lost from the body

B. Edema--Condition in which the body tissues retain an excessive amount of tissue fluid

C. Ascites--Excessive accumulation of fluid in the peritoneal cavity

D. Peritoneal cavity--Space between the two layers of the peritoneum

E. Anuria--Suppression of urinary output

F. Oliguria--Diminished urinary output

G. Dehydration--Condition that results when fluid output exceeds fluid intake

H. Diaphoresis--Profuse perspiration

I. Diuretic--Agent or medication that increases urinary output

J. Polyuria--Excessive secretion and excretion of urine

K. Graduate--Measuring device marked in ccs

L. Tissue turgor--Fullness of tissue related to the amount of fluid surrounding the cells

II. Before meal care

A. Provide for elimination

1. Offer the bedpan or urinal or assist to the bathroom before mealtime

2. Interrupting the meal for elimination may be distressful to the patient

3. Patient's appetite may be decreased if he is uncomfortable from not having eliminated prior to mealtime

B. Give mouth and hand care

1. Many sick people have a bad taste in their mouth; if mouth care is not given, their food may taste bad

2. Hand cleanliness helps prevent spread of infection

INFORMATION SHEET

C. Position patient

1. Assist patient to sit up in a chair if possible
2. If patient needs to remain in bed, elevate him to a sitting position if permissible
3. Position overbed table for the convenience of the patient
4. If the patient must remain recumbent, prepare a place for the tray to be set on his bedside table

D. Prepare the environment

1. Create an attractive environment by putting away utensils such as emesis basin, bedpan, or urinal
2. Place a fresh glass of water within the patient's reach

III. Preparation and serving of trays

A. Check name and room number so each patient receives the correct tray

B. Serve one tray at a time to avoid dropping tray or spilling liquids

C. Serve trays promptly so foods are at the desirable serving temperature

D. Check each tray to see that it is complete

(NOTE: Besides food in covered containers each tray should have a napkin, eating utensils, and, if allowed, sugar, salt, and pepper.)

E. See that each patient who should have a tray receives one

F. Patients who need to be fed should be served after the other patients to allow health personnel to feed them with a minimum of interruptions

IV. Assisting the patient at mealtime

A. Place tray on the table with the main dish closest to the patient

B. Remove food covers and put them to one side

C. Help the patient as necessary with cutting food, buttering bread, and pouring beverage; place food and communication device so they are easily reached

D. Allow the patient ample time to eat; stress importance of therapeutic diet if necessary; if he does not eat, try to determine the reason

INFORMATION SHEET

E. Avoid unnecessary interruptions during mealtime such as giving treatments or medications

F. Complaints about the food or food service should receive prompt attention; if necessary, arrangements should be made for the patient to discuss the matter with the dietitian

V. Feeding a patient

A. Place the patient in a comfortable position

B. Place the tray so the patient can see the food if possible

C. When possible, the nurse should sit while feeding the patient

(NOTE: The patient will be more relaxed and feel less hurried if the nurse is sitting to feed him.)

D. If the patient is unable to see the food, the nurse should describe the meal and tell him what he is being offered

E. Place a napkin or bib under the patient's chin

F. Fill fork or spoon only half full; avoid spilling

G. Feed slowly, alternating the foods

H. Allow enough time between bites; stop occasionally so the patient can rest

I. Liquids should be given through a drinking tube; when giving hot liquids, the patient should be warned to take only small sips to avoid being burned

J. If the patient is able, encourage him to hold his own bread or drinking straw

VI. Observing fluid intake

A. When intake and output records are being kept for a patient, the amount of liquids taken with meals must be recorded accurately; this is a nursing responsibility

B. If in doubt about the size of a container, fill it with water and pour the water into a graduate to measure it

C. When fluids are being forced or restricted, adjust fluid intake accordingly

VII. After meal care

A. Assist with mouth care

B. Straighten bed and remove crumbs

INFORMATION SHEET

C. Place patient in a comfortable position or help him return to bed if he has been up; adjust communication device

D. Place food covers back on tray and return tray to proper place

E. Amount and kinds of food eaten should be noted and recorded

VIII. Importance of fluids

A. In an adult approximately sixty percent of the body weight is comprised of fluids

B. Fluids are vital to all body functions, such as lubrication of joints and membranes

C. In a healthy state, water intake is balanced by water loss

D. In illness this balance may be upset and special care may be needed to restore the balance

E. Fluid intake is essential in the maintenance of electrolyte balance

IX. Ways of administering fluids to patients

A. Orally--In food and fluids taken by mouth or by gastric tube

B. Intravenously--Fluids given into the vein

C. By hypodermoclysis--Fluids given into the tissue under the skin; primarily used for giving fluids to infants and elderly persons

X. Ways fluid is lost from the body

A. Urination

B. Defecation

C. Perspiration

D. Respiration

E. Vomiting

F. Drainage from wounds

G. Hemorrhage

H. Extensive burns

INFORMATION SHEET

XI. Influences on the amount of urine secreted

- A. Amount of fluid intake
- B. Body temperature

  (NOTE: Fever increases sweating and decreases urine.)
- C. Emotional stress

  (NOTE: Changes in blood pressure affect urine production.)
- D. Pain

  (NOTE: It usually decreases urine production.)
- E. Age

  (NOTE: Infants produce three or four times more urine for their weight than adults.)
- F. Condition of the kidneys
- G. Various disease conditions

XII. Symptoms of edema

- A. Weight gain
- B. Swelling of tissues, particularly feet, ankles, face, and fingers
- C. Ascites
- D. Anuria
- E. Oliguria

XI I. Symptoms of dehydration

- A. Thirst
- B. Dry skin and mucous membrane
- C. Constipation
- D. Oliguria
- E. Fall in blood pressure with weak, rapid pulse
- F. Elevated temperature

INFORMATION SHEET

G. Loss of tissue turgor

(NOTE: In severe dehydration, body fluid is pulled from the peripheral tissues, leaving the skin loose and dry. When the skin is pinched, it does not return quickly to its original state but remains in the folds or returns slowly.)

XIV. Measurement of oral intake

A. Average oral intake for an adult is 2000 to 3000 cc of fluid per day, approximately two to three quarts

B. Physician may restrict or encourage fluid intake; it is the nurse's responsibility to know which has been ordered

C. When intake and output is ordered, accuracy is very important and the patient and his family should be informed of the procedure

D. Checking liquid intake at mealtime and between meals is a nursing responsibility

XV. Fluids which must be measured for oral intake

A. Water

B. Coffee

C. Tea

D. Gelatin

E. Ice cream, milk shakes

F. Sherbet

G. Carbonated beverages

H. Milk

I. Juices

J. Broth or soup

K. Cream

L. Ice chips

XVI. Fluids which must be measured for output

A. Urine

B. Fluid from suction devices

INFORMATION SHEET

C. Vomitus

D. Estimated amount of hemorrhage, drainage, or perspiration

XVII. Measuring intake and output

A. Keep accurate record of intake--Usually a paper and pencil are kept at the patient's bedside for each eight hour shift to record intake and output

B. Intake and output are totaled at the end of each twenty-four hour period

C. At mealtime check patient's tray before serving and after he has eaten to determine intake

D. Before pitcher is emptied, measure water left to determine the amount which has been taken

E. Measure urinary output accurately each time bedpan or urinal is emptied

F. Measure and record any other body discharges such as vomiting, diarrhea, or in suction apparatus and drainage on dressings; mention diaphoresis on intake and output record if patient perspires profusely

(NOTE: If unable to measure accurately, estimate amount and mark on chart estimated amount.)

G. Notify patient and family that intake and output is being measured to enlist his cooperation

NUTRITION AND FLUIDS
UNIT IX

ASSIGNMENT SHEET #1--MEASURE INTAKE

Using the following equipment: cups, bowls,glasses, pitcher, graduate, water, and ice chips, perform the tasks below.

1. Fill containers with water.
2. Measure water from each container with the graduate.

Juice glass ____________cc

Water glass ____________cc

Paper cup ____________cc

Soup bowl ____________cc

Pitcher ____________cc

Coffee cup ____________cc

3. Fill a juice glass with ice chips, melt the chips, and measure.

Juice glass of ice chips ____________cc

4. Figure intake for the following meal.

Soup	1/2 bowl taken
Milk	2/3 glass
Juice	1 glass
Jello	1 serving
Ice chips	1/2 paper cup
Coffee	1/3 cup

NUTRITION AND FLUIDS
UNIT IX

TEST

1. Match the terms on the right to the correct definition.

_____a. Space between the two layers of the peritoneum

_____b. Excessive secretion and excretion of urine

_____c. Suppression of urinary output

_____d. Agent or medication that increases urinary output

_____e. Accurate record of all liquids taken by a patient and accurate measurement of all urine, vomitus, drainage, or other liquid lost from the body

_____f. Diminished urinary output

_____g. Condition that results when fluid output exceeds fluid intake

_____h. Excessive accumulation of fluid in the peritoneal cavity

_____i. Profuse perspiration

_____j. Condition in which the body tissues retain an excessive amount of tissue fluid

_____k. Measuring device marked in ccs

_____l. Fullness of tissue related to the amount of fluid surrounding the cells

1. Graduate
2. Intake and output
3. Peritoneal cavity
4. Tissue turgor
5. Edema
6. Polyuria
7. Diaphoresis
8. Oliguria
9. Dehydration
10. Anuria
11. Ascites
12. Diuretic

2. Describe before meal care.

3. List four points to remember in preparation and serving of the patient's tray.

   a.

   b.

   c.

   d.

4. Discuss assisting the patient at mealtime.

5. List eight points to remember when feeding a patient.
   a
   b.
   c.
   d.
   e.
   f.
   g.
   h.

6. Discuss the observation of fluid intake.

7. List four things to do in after meal care.
   a.
   b.
   c.
   d.

8. Discuss the importance of fluids.

9. List three ways of administering fluids.

a.

b.

c.

10. List five ways fluid is lost from the body.

a.

b.

c.

d.

e.

11. List five influences on the amount of urine secreted.

a.

b.

c.

d.

e.

12. List four symptoms of edema.

a.

b.

c.

d.

13. List four symptoms of dehydration.

a.

b.

c.

d.

14. Discuss measurement of oral intake.

15. List at least nine fluids which must be measured when keeping an accurate oral intake.

a.

b.

c.

d.

e.

f.

g.

h.

i.

16. List three fluids measured for output.

a.

b.

c.

17. Discuss points to remember when measuring intake and output.

18. Demonstrate the ability to measure liquids in various containers.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

NUTRITION AND FLUIDS
UNIT IX

ANSWERS TO TEST

1. a. 3
   b. 6
   c. 10
   d. 12
   e. 2
   f. 8
   g. 9
   h. 11
   i. 7
   j. 5
   k. 1
   l. 4

2. Description should include:

   a. Provide for elimination

      1) Offer the bedpan or urinal or assist to the bathroom before mealtime

      2) Interrupting the meal for elimination may be distressful to the patient

      3) Patient's appetite may be decreased if he is uncomfortable from not having eliminated prior to mealtime

   b. Give mouth and hand care

      1) Many sick people have a bad taste in their mouth; if mouth care is not given, their food may taste bad

      2) Hand cleanliness helps prevent spread of infection

   c. Position patient

      1) Assist patient to sit up in chair if possible

      2) If patient needs to remain in bed, elevate him to a sitting position if permissible

      3) Position overbed table for the convenience of the patient

      4) If the patient must remain recumbent, prepare a place for the tray to be set on his bedside table

d. Prepare the environment

1) Create an attractive environment by putting away utensils such as emesis basin, bedpan, or urinal

2) Place a fresh glass of water within the patient's reach

3. Any four of the following

a. Check name and room number so each patient receives the correct tray

b. Serve one tray at a time to avoid dropping tray or spilling liquids

c. Serve trays promptly so foods are at the desirable serving temperature

d. Check each tray to see that it is complete

e. See that each patient who should have a tray receives one

f. Patients who need to be fed should be served after the other patients to allow health personnel to feed them with a minimum of interruptions

4. Discussion should include:

a. Place tray on the table with the main dish closest to the patient

b. Remove food covers and put them to one side

c. Help the patient as necessary with cutting food, buttering bread, and pouring beverage; place food and communication device so they are easily reached

d. Allow the patient ample time to eat; stress importance of therapeutic diet if necessary; if he does not eat, try to determine the reason

e. Avoid unnecessary interruptions during mealtime such as giving treatments or medications

f. Complaints about the food or food service should receive prompt attention; if necessary, arrangements should be made for the patient to discuss the matter with the dietitian

5. Any eight of the following

a. Place the patient in a comfortable position

b. Place the tray so the patient can see the food if possible

c. When possible, the nurse should sit while feeding the patient

d. If the patient is unable to see the food, the nurse should describe the meal and tell him what he is being offered

e. Place a napkin or bib under the patient's chin

f. Fill fork or spoon only half full; avoid spilling

g. Feed slowly, alternating the foods

h. Allow enough time between bites; stop occasionally so patient can rest

i. Liquids should be given through a drinking tube; when giving hot liquids, the patient should be warned to take only small sips to avoid being burned

j. If the patient is able, encourage him to hold his own bread or drinking straw

6. Discussion should include:

   a. When intake and output records are being kept for a patient, the amount of liquids taken with meals must be recorded accurately; this is a nursing responsibility

   b. If in doubt about the size of a container, fill it with water and pour the water in a graduate to measure it

   c. When fluids are being forced or restricted, adjust fluid intake accordingly

7. Any four of the following

   a. Assist with mouth care

   b. Straighten bed and remove crumbs

   c. Place patient in a comfortable position or help him return to bed if he has been up; adjust communication device

   d. Place food covers back on tray and return tray to proper place

   e. Amount and kinds of food eaten should be noted and recorded

8. Discussion should include:

   a. In an adult approximately sixty percent of the body weight is comprised of fluids

   b. Fluids are vital to all the body functions, such as lubrication of joints and membranes

   c. In a healthy state, water intake is balanced by water loss

   d. In illness this balance may be upset and special care may be needed to restore the balance

   e. Fluid intake is essential in the maintenance of electrolyte balance

9. a. Orally

   b. Intravenously

   c. By hypodermoclysis

10. Any five of the following
    a. Urination
    b. Defecation
    c. Perspiration
    d. Respiration
    e. Vomiting
    f. Drainage from wounds
    g. Hemorrhage
    h. Extensive burns
11. Any five of the following
    a. Amount of fluid intake
    b. Body temperature
    c. Emotional stress
    d. Pain
    e. Age
    f. Condition of the kidneys
    g. Various disease conditions
12. Any four of the following
    a. Weight gain
    b. Swelling of tissues, particularly feet, ankles, face, and fingers
    c. Ascites
    d. Anuria
    e. Oliguria
13. Any four of the following
    a. Thirst
    b. Dry skin and mucous membrane
    c. Constipation
    d. Oliguria
    e. Fall in blood pressure with weak, rapid pulse

f. Elevated temperature

g. Loss of tissue turgor

14. Discussion should include:

a. Average oral intake for an adult is 2000 to 3000 cc of fluid per day, approximately two to three quarts

b. Physician may restrict or encourage fluid intake; it is the nurse's responsibility to know which has been ordered

c. When intake and output is ordered, accuracy is very important and the patient and his family should be informed of the procedure

d. Checking liquid intake at mealtime and between meals is a nursing responsibility

15. Any nine or more of the following

a. Water

b. Coffee

c. Tea

d. Gelatin

e. Ice cream, milk shakes

f. Sherbet

g. Carbonated beverages

h. Milk

i. Juices

j. Broth or soup

k. Cream

l. Ice chips

16. Any three of the following

a. Urine

b. Fluid from suction devices

c. Vomitus

d. Estimated amount of hemorrhage, drainage, or perspiration

17. Discussion should include:

    a. Keep accurate record of intake--Usually a paper and pencil are kept at the patient's bedside for each eight hour shift to record intake and output

    b. Intake and output are totaled at the end of each twenty-four hour period

    c. At mealtime check patient's tray before serving and after he has eaten to determine intake

    d. Before pitcher is emptied, measure water left to determine the amount which has been taken

    e. Measure urinary output accurately each time bedpan or urinal is emptied

    f. Measure and record any other body discharges such as vomiting, diarrhea, or in suction apparatus and drainage on dressings; mention diaphoresis on intake and output record if patient perspires profusely

    g. Notify patient and family that intake and output is being measured to enlist his cooperation

18. Evaluated to the satisfaction of the instructor.

BODY ELIMINATION
UNIT X

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe elimination reflexes and actions and list factors which aid or hinder elimination. The student should be able to list characteristics to observe concerning urine or feces and demonstrate the ability to assist a patient with elimination. This knowledge will be evidenced by demonstration in clinical practice and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with elimination to the correct definition.
2. Discuss the transmission of urine to the bladder.
3. Describe the storage and emptying of urine from the bladder.
4. Discuss the rectal reflex.
5. List seven factors which inhibit elimination in the hospital setting.
6. List six nursing responsibilities related to urination and defecation.
7. List three characteristics to observe about urination.
8. List four characteristics to observe about defecation.
9. List six nursing measures to aid elimination.
10. List three possible reasons for keeping an accurate urinary output.
11. List seven points to remember in giving and/or removing a bedpan or urinal.
12. Describe two classes of enemas, giving two types of each.
13. Discuss three other rectal procedures.
14. List three conditions which may require an ostomy.
15. Discuss the differences between an ileostomy and a colostomy.
16. Discuss the general care of ostomies.
17. List seven nursing responsibilities in assisting the patient to adjust to an ostomy.

18. List three purposes of colostomy irrigations.

19. List four general points to remember concerning colostomy irrigations.

20. Demonstrate the ability to:

    a. Give and remove a bedpan and/or urinal.

    b. Assist the patient to the bathroom.

    c. Assist the patient in using the commode.

    d. Give a cleansing enema.

    e. Give a retention enema.

    f. Give a rectal tube.

    g. Give a rectal suppository.

    h. Give a colostomy irrigation.

    i. Remove a fecal impaction.

BODY ELIMINATION
UNIT X

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Demonstrate and discuss procedures outlined on the job sheets.

   F. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to perform the procedures outlined on the job sheets.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1--Bedpan and Male Urinal

      2. TM 2--One Type of Commode

      3. TM 3--Enema Equipment

      4. TM 4--Administration of an Enema

      5. TM 5--Administration of a Rectal Suppository

6. TM 6--Colostomy Irrigation for a Bed Patient
7. TM 7--Colostomy Irrigation for an Ambulatory Patient

D. Job sheets

1. Job Sheet #1--Give and Remove Bedpan and/or Urinal
2. Job Sheet #2--Assist the Patient to the Bathroom
3. Job Sheet #3--Assist the Patient in Using the Commode
4. Job Sheet #4--Give a Cleansing Enema
5. Job Sheet #5--Give a Retention Enema
6. Job Sheet #6--Give a Rectal Tube
7. Job Sheet #7--Give a Rectal Suppository
8. Job Sheet #8--Give a Colostomy Irrigation
9. Job Sheet #9--Remove a Fecal Impaction

E. Test

F. Answers to test

II. References:

A. Guyton, Arthur C. *Function of the Human Body.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Mitchell, Pamela H. *Concepts Basic to Nursing.* New York: McGraw-Hill Book Company, 1973.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. Wood, Lucile A. *Nursing Skills for Allied Health Services.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1972.

III. Additional materials:

A. Film--"There is a Way." Oklahoma State Department of Health.

B. Filmstrips

1. "Bowel and Bladder Training." Trainex Corporation.
2. "Intake and Output." Trainex Corporation.
3. "Colostomy Care." Trainex Corporation.
4. "Colostomy Irrigation." Trainex Corporation.
5. "Cleansing Enema." Trainex Corporation.

C. Pamphlets

1. **Hollister Ostomy Guide.*
2. **Managing a Urostomy.*
3. **Managing Your Colostomy.*
4. **Managing Your Ileostomy.*

*Available from Hollister Inc., 211 E. Chicago Avenue, Chicago, Illinois 60611.

BODY ELIMINATION
UNIT X

INFORMATION SHEET

I. Terms and definitions

   A. Renal calculus--Kidney stone

   B. Constipation--Abnormally delayed or infrequent passage of dry, hardened feces

   C. Defecation--Elimination of waste and undigested food from the rectum

   D. Distention--State of being stretched out or filled overfull

   E. Incontinence--Inability to retain urine or feces due to loss of sphincter control

   F. Flatus--Gas in the digestive tract

   G. Commode--Chair with an open seat to accommodate a bedpan or other receptacle for feces and urine

   H. Urinal--Utensil used for urination

   I. Bedpan--Utensil used by a female for defecation and urination and by the male for defecation

   J. Fracture pan--Small, flat bedpan used for patients who are in casts or are unable to use conventional bedpan

   K. Anus--External opening of the rectum

   L. Suppository--Semi-solid medicated substance for introduction into the rectum, vagina, or urethra

   M. Sphincter--Ringlike muscle surrounding and closing an opening

   N. Hemorrhoids--Dilated blood vessels in the anal area

   O. Polyps--Growths attached to the mucous membranes of the nose, bladder, colon, or uterus

   P. Enema--Introduction of fluid into the rectum and colon

   Q. Diarrhea--Frequent movement of the bowels; increased number of stools per day, often liquid or semi-liquid

INFORMATION SHEET

R. Colitis--Inflammation of the colon

S. Stoma--Artificially created opening between a body cavity and the body's surface to divert feces, urine, or both

T. Ostomy--Surgical operation that creates a new outside opening or stoma

U. Colostomy--Incision into the colon to form an artificial anus or stoma

V. Ileostomy--Incision into the ileum of the small intestine to form an artificial anus or stoma

W. Proctoscopy--Examination of the rectum with a special instrument

X. Sigmoidoscopy--Examination of the sigmoid with a special instrument

Y. Fecal impaction--Collection of hardened feces in the rectum and/or sigmoid

Z. Proximal stoma--One closer to the stomach

AA. Distal stoma--One nearer the colon or rectum

BB. Fistula--Any abnormal tubelike passage within body tissue

II. Transmission of urine to the bladder

A. Urine, formed by the kidneys, is forced along the ureters by peristalsis

B. When disease or congenital abnormalities destroy the ability of the ureteral wall to contract, the urine collects in the pelvis of the kidney

(NOTE: The subsequent stagnation of urine in the kidney promotes infection and may lead to precipitation of crystalline substances forming renal calculi.)

III. Storage and emptying of urine from the bladder

A. The urinary bladder provides for storage of urine thereby preventing constant dribbling

B. The urethra is surrounded by two muscular sphincters, the internal sphincter which is controlled by the autonomic nervous system and the external sphincter which is controlled consciously by the brain

C. The urinary bladder is capable of expanding to hold a liter or more

INFORMATION SHEET

- D. When the bladder fills to 200 cc to 400 cc, special nerve receptors in the bladder wall become stimulated
- E. Afferent nerve impulses are transmitted to the spinal cord causing both a conscious desire to urinate and a subconscious reflex called the micturition reflex
- F. In turn, efferent impulses are transmitted to the bladder wall causing it to contract and to the internal sphincter causing it to relax
- G. Then the only thing hindering urination is the still contracted external sphincter
- H. Usually by conscious control the person can postpone the desire to urinate, at least for a time
- I. However, as the bladder becomes more filled the micturition reflex becomes so powerful that it cannot be consciously subdued and urination occurs

IV. Rectal reflex

- A. Rectal control is similar to urethral control with an internal and external sphincter
- B. When the sigmoid and rectum become distended with fecal material, afferent impulses are transmitted to the spinal cord which in turn excites the muscle walls of the rectum to contract and the internal sphincter to relax
- C. The external sphincter is consciously controlled and in the normal person these rectal reflexes can be inhibited adversely until constipation results

V. Factors which inhibit elimination in the hospital setting

- A. Lack of privacy
- B. Limited mobility
- C. Immobility as in traction or casts
- D. Diet changes
- E. Medications such as narcotics or barbiturates
- F. Fluid intake
- G. Recumbent position for prolonged periods
- H. Weakness because of illness or surgery
- I. Psychological or emotional stress

INFORMATION SHEET

VI. Nursing responsibilities related to urination and defecation

- A. Provide privacy for the patient during elimination
- B. Assist patient with daily elimination needs
- C. Provide opportunity for elimination at regular intervals to prevent bladder distention and constipation
- D. Establish a routine in an effort to control incontinence
- E. Keep a daily record of elimination
- F. Assist with keeping intake and output records
- G. Observe abnormalities in urine or feces
- H. Collect urine or feces for laboratory examination
- I. Assist in determining adequacy of elimination

VII. Characteristics to observe about urination

- A. Amount of urine
- B. Frequency, urgency, discomfort, or pain
- C. Color and transparency of urine
- D. Unusual odor of urine

(NOTE: Normal urine is clear and light yellow in color with a characteristic odor.)

VIII. Characteristics to observe about defecation

- A. Number of movements per day
- B. Consistency, shape, color, and odor
- C. Presence of any unusual matter such as blood or mucus
- D. Expulsion of flatus
- E. Symptoms of pain, abdominal distention, or cramping

INFORMATION SHEET

IX. Nursing measures to aid elimination

A. Assuring patient of absolute privacy

B. Proper positioning on bedpan

(NOTE: Leaning forward from the hips increases the internal abdominal pressure. If a person must use a bedpan for defecation, the nurse can assist him to attain the physiologically correct forward position by elevating the bed to the high Fowler's position if it is permitted.)

C. Offering bedpan at regular intervals

D. Giving bedpan to patient promptly when requested

E. Insuring adequate fluid intake

F. Encouraging patient to eat a well-balanced diet

G. Encouraging patient to move about and assisting with exercise

H. Assisting patient to use commode or toilet if permitted

I. Administration of enemas or suppositories as prescribed

X. Reasons for keeping accurate output of urine

A. Provide an accurate record of kidney function

B. Check on the effectiveness of drugs such as diuretics

C. Indicate whether bladder is emptying properly

(NOTE: When Intake and Output is ordered for a patient, the output usually includes wound drainage, emesis, and hemorrhage. Occasionally all food is weighed and all fluids measured precisely; sometimes all output is weighed so the doctor knows exactly the total intake and output.)

XI. Giving and removing a bedpan or urinal

A. If bedpan is metal, warm before placing under patient

B. Provide for privacy

1. Close door of room

2. Screen patient

INFORMATION SHEET

C. Do not keep patient waiting for bedpan or urinal; distention of bladder and rectum weakens the tone of the sphincter muscles and can lead to incontinence

D. Elevate head of bed so patient is in sitting position if permitted

E. Leave patient while he is on the bedpan but stay nearby or check frequently to see if he needs assistance or is finished

F. Do not leave patient on bedpan too long

G. Provide toilet tissue

H. Always use bedpan cover when taking bedpan to and from a patient's room

I. Check to see if accurate output is ordered

J. Allow patient to wash his hands after using bedpan, urinal, or bathroom

XII. Types of enemas

A. Nonretention or cleansing

1. Purpose--For softening and removal of feces from the colon and rectum

2. Types

a. Soapsuds

b. Physiologic saline

c. Carminitive

(NOTE: These contain an agent that will aid in expelling flatus.)

d. Hypertonic solutions of salts

B. Retention

1. Purpose--For injecting prescribed lubricants or medications into the colon and/or rectum

2. Types

a. Lubricating

b. Anthelmintic

(NOTE: These contain medication to help destroy intestinal parasites.)

INFORMATION SHEET

c. Emollient

(NOTE: Small amounts of oil or other soothing solutions are given to protect or soothe irritated mucous membranes.)

d. Medicated

(NOTE: Small amount of solution containing sedative, anesthesia, or other medications is given as prescribed.)

XIII. Other rectal procedures

A. Using rectal tube to aid in expulsion of flatus

1. May be used in conjunction with the administration of medication which stimulates peristalsis

2. Rectal tube should not remain in place more than thirty minutes

3. If needed, may be reinserted after several hours

B. Inserting suppository

1. May be used to stimulate bowel action, relieve pain, or soothe the rectum

2. Suppository must be inserted to a position above the anal sphincter and along the wall of the rectum

3. Suppository to stimulate bowel action is more effective if given thirty to sixty minutes prior to mealtime

4. Those given to relieve pain and soothe the rectum are intended to be retained for an indefinite length of time

C. Removal of fecal impaction

1. Symptoms of fecal impaction may be absence of bowel movement for two or more days or the passage of small amounts of semi-liquid stool

2. Person examining for or removing a fecal impaction should wear gloves which are lubricated well

   (NOTE: The lubricant is used to facilitate the insertion of the gloved finger and to protect the rectal mucosa from abrasion.)

3. Careful, gentle manipulation while breaking the mass will help to minimize the discomfort being experienced by the patient

INFORMATION SHEET

4. Manual removal may be followed by a cleansing enema

5. Impactions usually occur in patients who are not fully aware of their surroundings

6. Prevention of fecal impactions through the promotion of regular evacuation is the best treatment

XIV. Conditions which may require an ostomy

(NOTE: Ostomy patients may have one or two stomas depending upon the reasons for surgery. The ostomy may be temporary or permanent.)

A. Obstruction of the bowel or ureter

B. Severe inflammation or irritation of the small intestine or colon

C. Traumatic injury of abdominal organs

D. Benign or malignant tumor of the abdomen

E. Fistulas or congenital defects

XV. Differences between an ileostomy and a colostomy

A. Ileostomy

1. Usually all the colon has been removed

2. Stoma is usually smaller and is located on the right side

3. Discharge will be liquid or semi-liquid

4. Collecting pouch will be needed at all times and will require emptying at three to four hour intervals or more often as needed

5. Never irrigated

6. Usually permanent

B. Colostomy

1. Part of the colon has been removed

2. Stoma is usually on the left side of the abdomen

3. After regulation, feces is usually of formed consistency

4. After regulation, the stoma is covered with a small dressing or other device for protection

INFORMATION SHEET

5. Usually irrigated at specific intervals
6. May be permanent or temporary

XVI. Care of ostomies

A. Dressings must be changed frequently to keep the patient clean, dry, and free from offensive odors

(NOTE: During initial period, dressings should be large and absorbent. Size of dressings may be reduced as the colostomy becomes regulated.)

B. Skin surrounding the stoma should be cleansed with water; when soap is used, it should be mild and should be rinsed off thoroughly

C. Amount and type of drainage should be observed and recorded

D. Odor may be minimized by cleanliness and dietary adjustment; when prescribed, tablets containing charcoal, chlorophyl, or bismuth may be taken orally or used in the drainage bag

E. Skin must be dry before putting on an adhesive appliance so it will adhere properly

F. Skin should be taut to avoid wrinkles under the adhesive

(NOTE: Wrinkles in the skin or a poorly attached bag may allow leakage.)

G. When caring for a patient with a regulated colostomy, follow his routine as closely as possible

XVII. Assisting the patient to adjust to an ostomy

A. Accept his procedure and provide care without showing repugnance or distaste

B. Encourage him to talk about his worries and to ask questions

C. Change dressings as often as needed for patient comfort and to avoid odors

D. Avoid dressing changes at mealtime

E. Provide care until patient is ready mentally and physically to assume the responsibility

F. Allow him to assist when he is able and instruct him as needed

G. Patient will need time to adjust to this extreme change in his manner of living; support and encourage him and his family

INFORMATION SHEET

- H. Insofar as possible the patient should determine the time for his care to allow for adjustment to his lifestyle
- I. When possible, a member of the patient's family should receive instruction in his care also
- J. High-residue foods or foods which cause flatus or diarrhea are usually avoided

XVIII. Purposes of colostomy irrigations

- A. Cleansing the colon of fecal material
- B. Aiding in establishing regular bowel habits
- C. Prevention of bowel obstruction

XIX. Points to remember concerning colostomy irrigations

- A. Procedure should be done at the same time each day
- B. Approximately thirty minutes is required for the procedure
- C. When irrigations are done regularly, control can usually be established in three to ten days; after regulation, irrigations are usually required once every day or two
- D. Skin around the stoma must be protected from the irritating fecal material
- E. As soon as the colostomy is working, the patient should be fitted with an appliance to collect fecal material

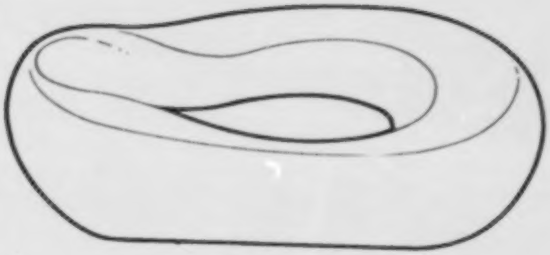
  (NOTE: Reusable appliances may be held in place by a belt and will require emptying and thorough cleaning daily or more often. Disposable types are cemented directly to the skin and replaced as needed.)

- F. Frequency of irrigations is regulated according to the patient's needs

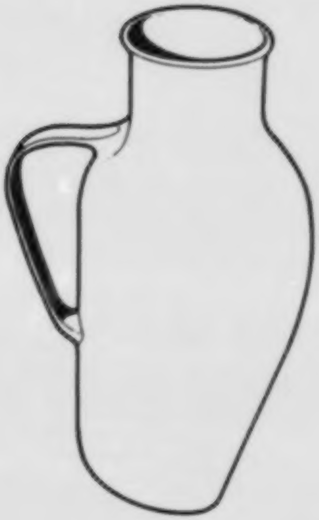
  (NOTE: Some patients may be able to regulate their diet so that irrigations are not needed; others may require irrigations daily or on alternate days.)

- G. Routinely only the proximal stoma is irrigated; the distal stoma is seldom irrigated

Bedpan and Male Urinal

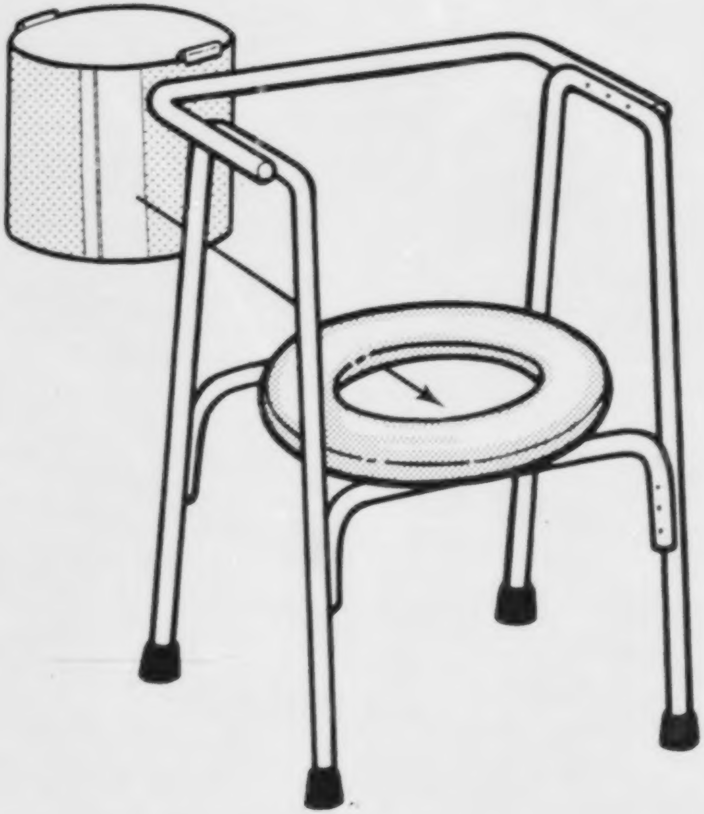


Bedpan

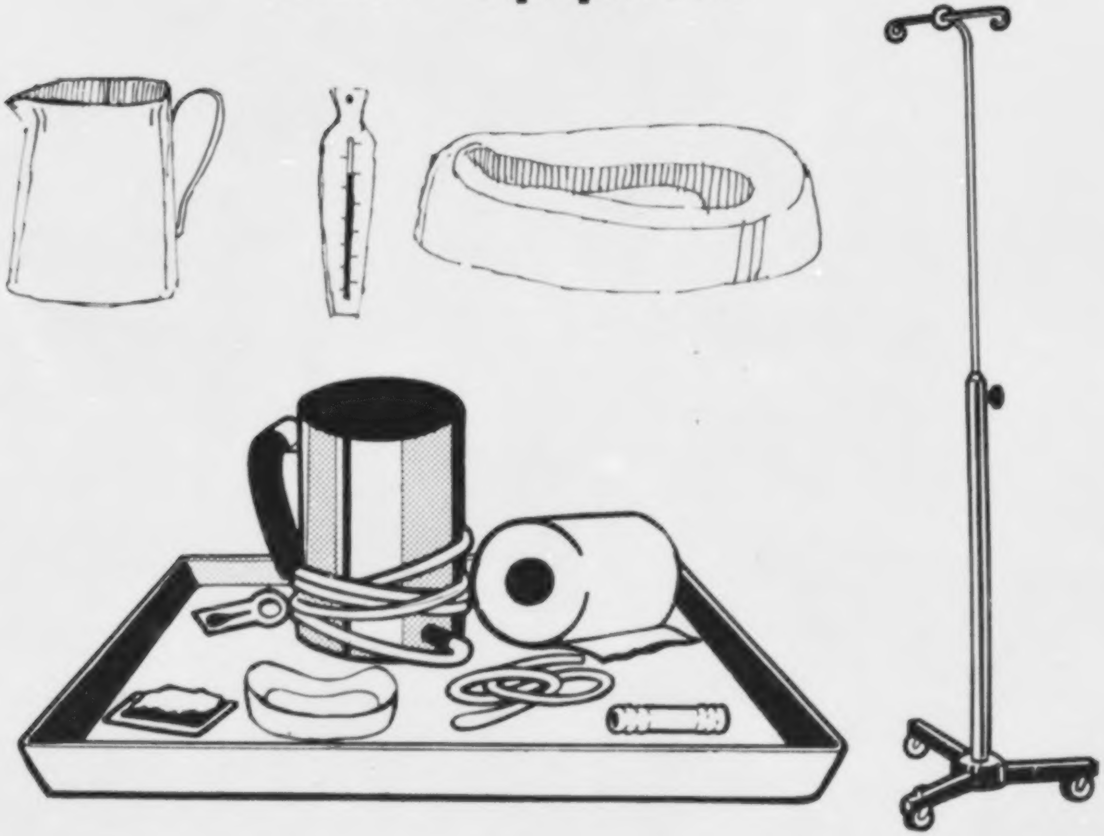


Male Urinal

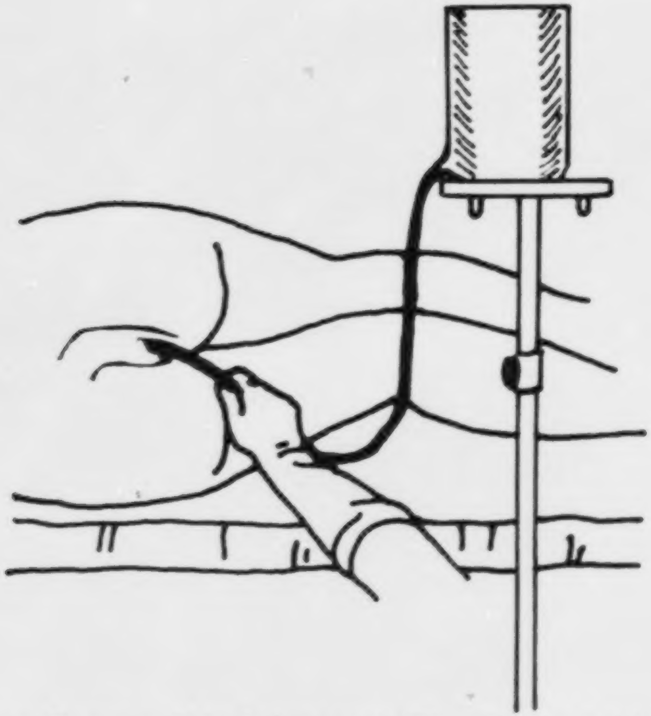
One Type of Commode



Enema Equipment

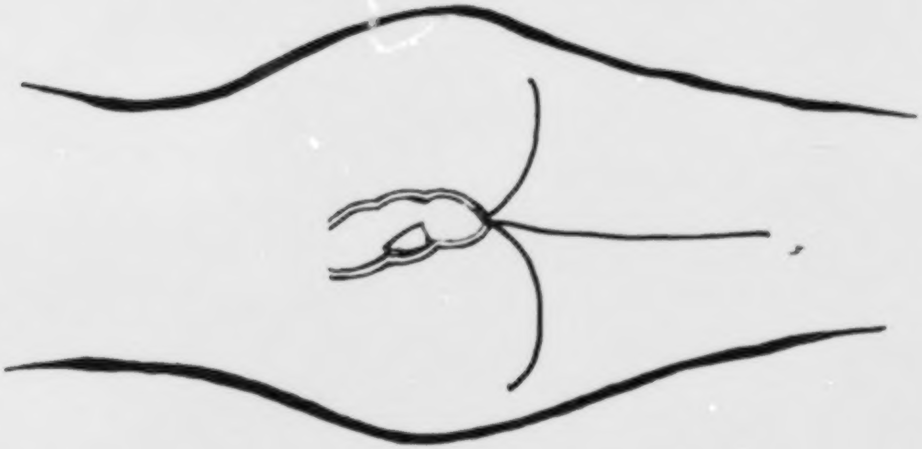


Administration of an Enema



To Have an Enema Administered, The Patient Lies On The Left Side

Administration of a Rectal Suppository



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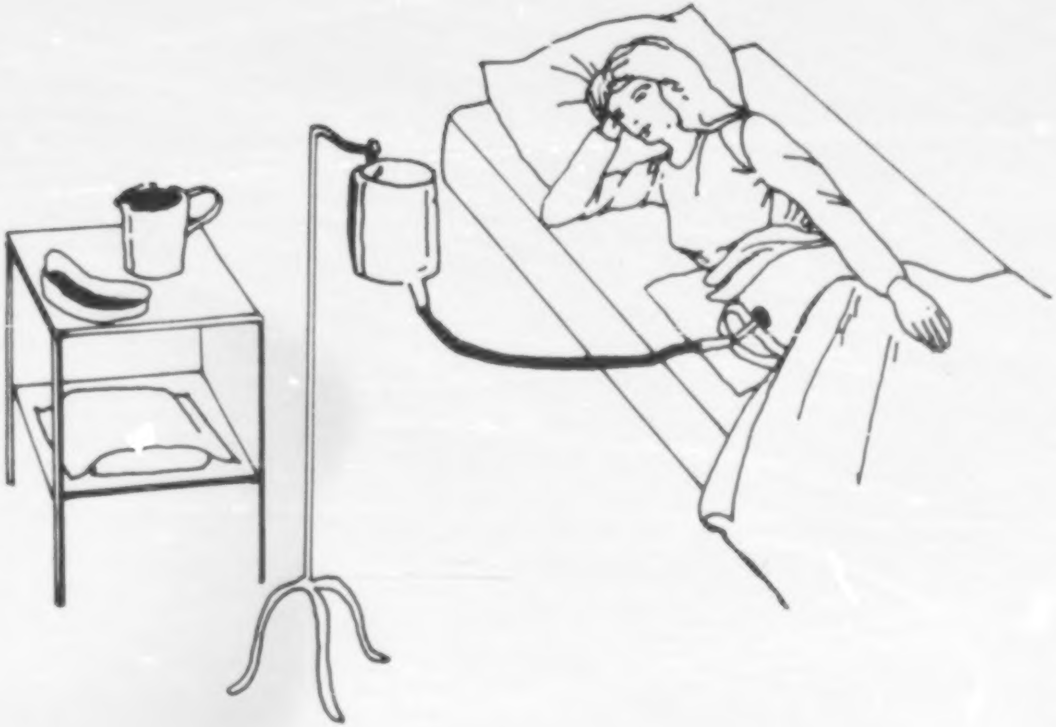
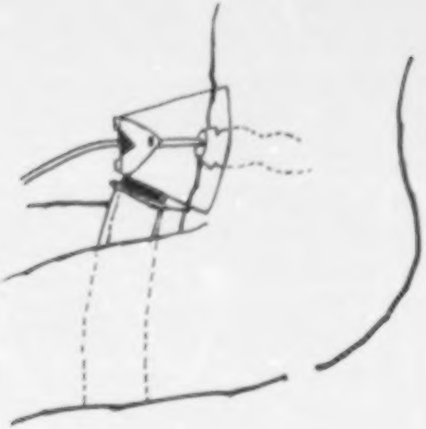
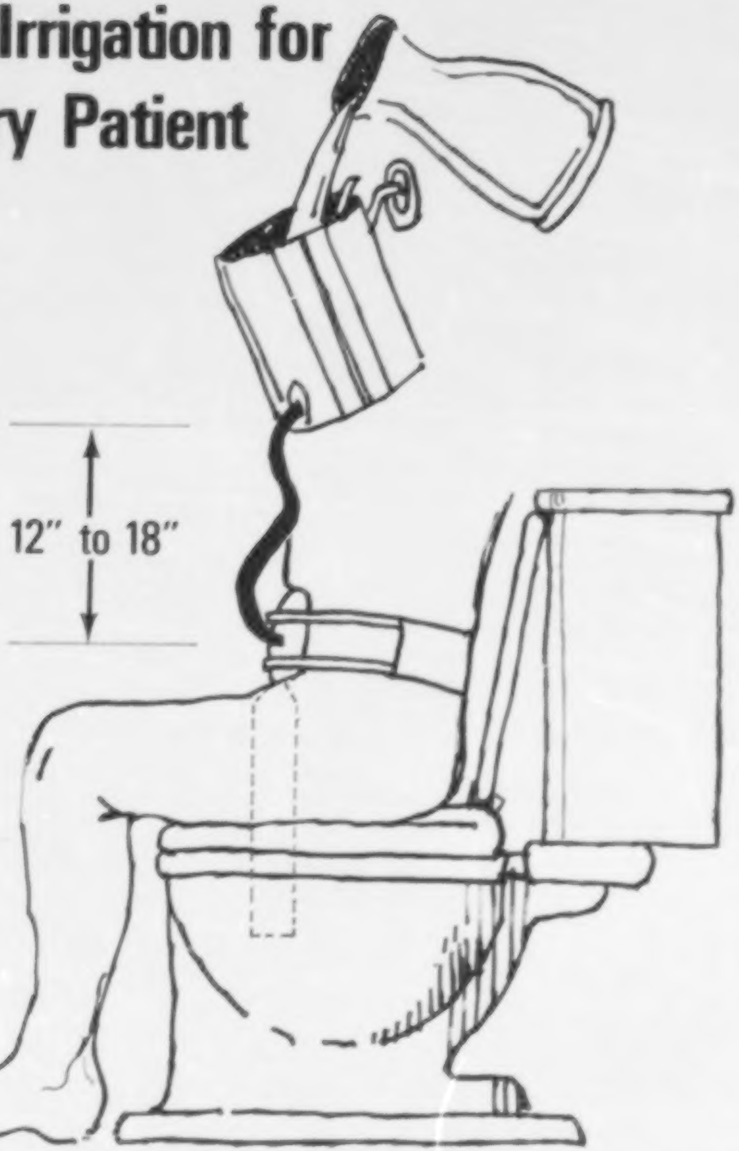
Colostomy Irrigation for Bed Patient



Colostomy Irrigation for Ambulatory Patient





BODY ELIMINATION
UNIT X

JOB SHEET #1--GIVE AND REMOVE BEDPAN AND/OR URINAL

I. Equipment needed

   A. Bedpan and/or urinal (Transparency 1)

   B. Bedpan cover

   C. Toilet tissue

   D. Wash basin

   E. Soap

   F. Towel

II. Procedure for giving bedpan

   A. Wash hands

   B. Warm bedpan; cover and take to patient's bedside

   C. Provide for privacy by closing door and placing screen for patient

   D. Turn back upper bedding part way without exposing patient

   E. Place patient on bedpan

      1. If patient can help

         a. Instruct patient to raise hips by flexing knees and resting weight on heels

         b. Support lower back with one hand and slip bedpan in place with the other

      2. If patient is unable to help

         a. Level bed and turn patient onto side, flexing leg

         b. Slip bedpan as far as possible under patient's hips

         c. Holding bedpan, turn patient onto bedpan

JOB SHEET #1

F. Raise backrest if permitted

G. Place toilet tissue within reach

H. Place communication device within reach and instruct patient to call for assistance or service when he needs it

I. Leave patient alone but return frequently to check him

J. Answer the patient's signal promptly

K. Remove bedpan

  1. If the patient can help

    a. Assist patient to raise hips by slipping hand under small of back and helping patient to raise buttocks

    b. Remove bedpan and cover

  2. If the patient is unable to assist

    a. Level bed; holding bedpan, turn patient to side

    b. Remove bedpan and cover

L. Cleanse patient as necessary

  1. With patient on side, clean area with toilet tissue; place soiled tissue in bedpan; cover bedpan

  2. Wash with soapy water if necessary

  3. Dry well

M. Make patient comfortable

  1. Straighten bedding

  2. Readjust bed to desired position

  3. Remove screen

N. Remove bedpan from unit

  1. Look at contents of bedpan before emptying

JOB SHEET #1

        2. Empty contents into toilet
        3. Rinse with cold water; cleanse thoroughly according to hospital procedure
    O. Wash hands
    P. Provide soap and basin of water for patient to wash his hands if needed
    Q. Report and record the color, amount, odor, and consistency of feces

III. Procedure for giving urinal
    A. Take covered urinal to patient's bedside
    B. Place covered urinal within reach of patient if patient is able to care for himself
    C. For patient who needs assistance
        1. Expose patient as needed
        2. Separate the patient's legs to permit placement of urinal
        3. Place penis into the urinal far enough that it does not slip out as the patient begins to urinate
        4. Hold the urinal in place if necessary
    D. If patient uses urinal unassisted, place communication device within reach
    E. Remove covered urinal from unit
        1. Measure urine if necessary
        2. Save specimen if needed
    F. Rinse urinal with cold water; use brush if necessary; return to storage
    G. Wash hands
    H. Assist patient to wash hands
    I. Make patient comfortable
    J. Wash hands
    K. Record amount and characteristics of urine

BODY ELIMINATION
UNIT X

JOB SHEET #2--ASSIST THE PATIENT TO THE BATHROOM

Procedure

A. Adjust bed to lowest position or place footstool for patient

B. Assist patient to sit on edge of bed

C. Put on patient's slippers and robe

D. Help patient to stand, giving him the necessary support while walking to the bathroom

E. Help patient to sit on toilet

F. Remain nearby to offer assistance as needed

G. When patient is finished, have him wash his hands

H. Assist patient to return to bed

I. Provide for patient's comfort

J. Wash hands

K. Record elimination

BODY ELIMINATION
UNIT X

JOB SHEET #3--ASSIST THE PATIENT IN USING THE COMMODE

I. Equipment needed

  A. Commode chair (Transparency 2)

  B. Toilet tissue

  C. Bathrobe

  D. Slippers

II. Procedure

  A. Take commode to bedside and place conveniently

  B. Lock wheels of commode chair

  C. Prepare patient

    1. Assist patient to sitting position in bed

    2. Dress patient in bathrobe and slippers

  D. Assist patient out of bed and onto commode

  E. Place communication device within reach and leave patient

  F. Check patient as needed

  G. Assist patient as necessary to cleanse himself

  H. Assist in returning to bed

  I. Wash patient's hands

  J. Examine and measure the contents in removable chamber

  K. Clean commode and replace the removable chamber

  L. Wash hands

  M. Record elimination

BODY ELIMINATION
UNIT X

JOB SHEET #4–GIVE A CLEANSING ENEMA

I. Equipment needed (Transparency 3)

  A. Tray

  B. Irrigating can with tubing and clamp or disposable container

  C. Connecting tube

  D. Rectal tube or tip

  E. Emesis basin

  F. Lubricant

  G. Toilet tissue

  H. Bath thermometer

  I. Pitcher or graduate

  J. Solution as prescribed

  K. Bath blanket

  L. Bed protector

  M. Bedpan with cover

  N. Standard

II. Procedure

  A. Wash hands

  B. Assemble equipment

  C. Prepare solution as prescribed

  (CAUTION: When preparing solution, such as soap suds or physiologic saline solution, temperature of the solution should be 105°F. Solution given at 110°F or higher may burn the mucous lining of the intestines.)

JOB SHEET #4

D. Identify patient and explain the procedure

E. Provide for privacy

F. Replace top covers with bath blanket or cover

G. Assist patient to turn to his LEFT side in Sims' position (Transparency 4)

H. Place bed protector under patient's buttocks

I. Hang irrigating can on the standard so the solution is twelve to eighteen inches above the anus

(NOTE: If there is no standard available, hold the can at this level after the rectal tube has been inserted.)

J. Allow a small amount of solution to flow into the emesis basin or bedpan to expel the air and cooled solution from the tubing; clamp or pinch tubing

K. Lubricate two to three inches of the tip of the rectal tube, using lubricant on a piece of toilet tissue

L. Separate buttocks and gently insert tip of tube into anus

M. Release the tubing, allowing solution to run slowly

(NOTE: Instruct the patient to breathe deeply through his mouth and to tell of any cramping or discomfort he may have.)

N. Regulate the flow of solution by pinching off the tube momentarily at intervals during the administration

O. Clamp off the tubing when most of the solution has been given or when the patient indicates he is unable to take any more

(NOTE: Clamping off the tubing before the last solution runs into it prevents air from reaching the patient.)

P. Slowly withdraw the rectal tube, cover it with a piece of tissue, and place it in the emesis basin

Q. Assist the patient onto the bedpan

R. Elevate head of bed if permitted

S. Place toilet tissue and communication device within patient's reach

JOB SHEET #4

T. Remove the equipment; clean and return to storage

U. Check the patient frequently

V. Remove the bedpan when the enema and feces have been completely expelled

W. Assist the patient as necessary with cleansing

X. Empty bedpan, observing the results of the enema, the color, amount, and consistency of the feces

Y. Wash hands

Z. Assist the patient to wash his hands

AA. Provide for the patient's comfort

BB. Wash hands

CC. Report and record the procedure and observations

(NOTE: If disposable enema is used, follow manufacturer's instructions.)

BODY ELIMINATION
UNIT X

JOB SHEET #5–GIVE A RETENTION ENEMA

I. Equipment needed

- A. Solution as prescribed in a small pitcher or graduate
- B. Rectal tube or small catheter
- C. Funnel or Asepto syringe
- D. Bath blanket
- E. Lubricant
- F. Bed protector
- G. Emesis basin
- H. Toilet tissue

II. Procedure

- A. Wash hands
- B. Assemble equipment
- C. Prepare solution

  (NOTE: Temperature of solution should be 100°F and usually less than 200 cc is given.)
- D. Identify patient and explain procedure
- E. Provide for privacy
- F. Replace top covers with bath blanket
- G. Assist patient to turn onto his LEFT side
- H. Place protective pad under his buttocks
- I. Lubricate two or three inches of the tip of the rectal tube or catheter
- J. Insert tip of tube two or three inches into the rectum

JOB SHEET #5

K. Hold the funnel or Asepto syringe eight inches or less above the anus

(NOTE: Holding the funnel lower causes less pressure and aids the patient's ability to retain the solution.)

L. Keep adding the solution until all has been taken

M. Clamp off the tubing just before the last of the solution has been taken

N. Remove the rectal tube slowly, cover with tissue, and place in emesis basin

O. Leave bed protector under the patient's buttocks

P. Replace top covers; provide for patient's comfort

Q. Remove, clean, and replace equipment

R. Wash hands

S. Report and record treatment and observations

BODY ELIMINATION
UNIT X

JOB SHEET #7--GIVE A RECTAL SUPPOSITORY

I. Equipment needed

- A. Suppository as prescribed
- B. Container for suppository
- C. Rectal glove

II. Procedure

- A. Wash hands
- B. Assemble equipment
- C. Identify patient and explain procedure
- D. Provide for privacy
- E. Turn patient onto left side and expose buttocks
- F. Put on glove
- G. Using gloved finger, insert suppository approximately 2 1/2 to 3 inches along the wall of the rectum

  (NOTE: If the purpose of the suppository is to induce a bowel movement, the suppository should be retained for twenty minutes or longer; if it is for medication purposes, it is to be retained indefinitely.)
- H. Provide for the patient's comfort
- I. Wash hands
- J. Report and record the procedure and observations

4

BODY ELIMINATION
UNIT X

JOB SHEET #6-GIVE A RECTAL TUBE

I. Equipment needed

- A. Small rectal tube
- B Lubricant
- C. Toilet tissue
- D. Bed protector
- E. Adhesive tape
- F. Container or paper towels

II. Procedure

- A. Wash hands
- B. Assemble equipment
- C. Identify patient and explain procedure
- D. Provide for privacy
- E. Turn patient onto LEFT side; remove top covers sufficiently to expose buttocks
- F. Lubricate tip of rectal tube
- G. Gently insert tube about three or four inches
- H. Tape in place with adhesive tape if necessary
- I. Place end of tube in container or in folded paper towels in case there is expulsion of fecal material
- J. Leave in place prescribed length of time, usually twenty to thirty minutes
- K. Remove rectal tube; provide for patient's comfort
- L. Clean and return equipment to storage
- M. Wash hands
- N. Report and record treatment and observations

BODY ELIMINATION
UNIT X

JOB SHEET #8-GIVE A COLOSTOMY IRRIGATION

I. Equipment needed (should be sterile as long as the colostomy is a wound)

   A. Irrigating can with tubing, metal clamp, and connecting rod

   B. French catheter, size 16 to 18

   C. Lubricant

   D. Pitcher with prescribed solution

   E. Two emesis basins

   F. Plastic irrigating bag or plastic apron for ambulatory patient

   G. Toilet tissue

   H. Belt or binder to hold dressing or appliance in place as needed

   I. Equipment to cleanse surrounding area

   J. Plastic bag for soiled dressings or disposable appliance

   K. Medication

   L. Bed protector

II. Procedure for bed patient (Transparency 6)

   A. Wash hands

   B. Assemble equipment

   C. Identify patient and explain procedure

   D. Provide for privacy

   E. Place folded bath blanket over the patient's chest; fold top covers down to groin

   F. Place bed protector under patient's side under colostomy area

   G. Remove soiled dressings

   (NOTE: Observe the drainage.)

JOB SHEET #8

H. Assist the patient to turn slightly toward the side of the colostomy opening

I. Place an emesis basin under the colostomy opening

J. Hang the irrigating can eighteen inches or less above the stoma

K. Lubricate the tip of the catheter and run a small amount of solution through the tubing to remove air; pinch off tubing or reclamp

L. Insert the catheter into the stoma about four to six inches

M. Open clamp and allow the solution to flow in slowly, pinching off the tubing as necessary to control the rate of flow

N. Remove the catheter gently after the solution has been taken; solution may spurt out as the catheter is removed

O. Allow time for the solution to return

P. Cleanse the area surrounding the stoma with soap and water, rinsing the area well to remove the soap

Q. Apply medication as ordered around the stoma to prevent excoriation

R. Apply dressing or ostomy appliance as prescribed

S. Remove, clean, and replace equipment

T. Wash hands

U. Provide for patient's comfort; position communication device

V. Record and report the procedure and observations

III. Procedure for patient who is ambulatory or able to go the the bathroom (Transparency 7)

A. Wash hands

B. Assemble equipment

C. Identify patient and explain procedure

D. Assist patient to bathroom; provide for privacy

E. Assist the patient to the toilet and with the removal of the colostomy appliance as needed

JOB SHEET #8

F. Attach the irrigating bag to the appliance ring or fasten the plastic apron snugly below the colostomy with the end hanging down to direct the flow of the fecal material into the toilet

G. Hang the irrigating can; expel the air from the tubing

H. Lubricate the tip of the catheter

I. Insert the tip of the catheter into the stoma four to six inches

J. Allow solution to run in slowly; run in 250 to 500 cc depending upon the patient's ability to retain it

(NOTE: The solution may spurt from the stoma in a forceful spray. For protection hold an emesis basin or other device in front of the stoma during the irrigating procedure.)

K. Clamp the tubing and remove the catheter

L. Place the irrigating bag or fold of the plastic apron over the stoma to direct the flow of the feces and solution into the toilet

M. Repeat the irrigation as necessary until the return flow is clear of feces and flatus

N. Remove the irrigating bag or plastic apron

O. Assist the patient as necessary to clean the area around the stoma, dry the area, and apply a clean bag

P. Assist him as necessary to dress, allowing him to wash his hands before returning to his unit

Q. Wash hands; provide for the patient's comfort and position his communication device

R. Clean and return the equipment to storage

S. Wash hands

T. Report and record procedure and observations

BODY ELIMINATION
UNIT X

JOB SHEET #9 REMOVE A FECAL IMPACTION

I. Equipment needed

  A. Rubber gloves

  B. Lubricant

  C. Toilet tissue

  D. Bedpan with cover

  E. Paper towels

  F. Bed protector

  G. Bath blanket or cover

II. Procedure

  A. Wash hands

  B. Assemble equipment

  C. Identify patient and explain procedure

  (NOTE: This procedure is often very uncomfortable for the patient. Assistance in positioning the patient and in reassuring him during the procedure may be needed.)

  D. Provide for privacy

  E. Replace top covers with a bath blanket

  F. Place the patient in Sims' position; place a bed protector under his hips

  G. Fold bath blanket back to expose the patient's buttocks

  H. Place the bedpan within convenient reach on the bed or on a chair at the bedside

  I. Put on the gloves; lubricate well the index finger of one glove

  J. Gently insert the lubricated finger into the anus, following the curve of the rectal wall, to examine for presence of impaction and its consistency

  K. With the examining finger, break off a small piece of fecal material and gently remove it, placing it in the bedpan

JOB SHEET #9

L. Continue removing as much fecal material as can be reached with the finger or until the patient's discomfort warrants discontinuing the procedure

M. Remove soiled gloves and place in paper towels

N. If prescribed, give retention enema

O. If needed, place patient on bedpan to complete defecation

P. Wash and dry the patient's anal area; remove the bed protector and replace the top covers

Q. Provide for the patient's comfort; place the communication device conveniently

R. Clean the equipment and return to storage

S. Wash hands

T. Report and record the procedure and observations

BODY ELIMINATION
UNIT X

TEST

1. Match the terms on the right to the correct definition. (Answers to "a" through "n" are on this page.)

_____a. Kidney stone

_____b. Abnormally delayed or infrequent passage of dry, hardened feces

_____c. Elimination of waste and undigested food from the rectum

_____d. State of being stretched out or filled overfull

_____e. Inability to retain urine or feces due to loss of sphincter control

_____f. Gas in the digestive tract

_____g. Chair with an open seat to accommodate a bedpan or other receptacle for feces and urine

_____h. Utensil used for urination

_____i. Utensil used by a female for defecation and urination and by the male for defecation

_____j. Small, flat bedpan used for patients who are in casts or are unable to use conventional bedpan

_____k. External opening of the rectum

_____l. Semi-solid medicated substance for introduction into the rectum, vagina, or urethra

_____m. Ringlike muscle surrounding and closing an opening

_____n. Dilated blood vessels in the anal area

1. Flatus
2. Fracture pan
3. Hemorrhoids
4. Renal calculus
5. Commode
6. Anus
7. Constipation
8. Sphincter
9. Bedpan
10. Incontinence
11. Distention
12. Urinal
13. Suppository
14. Defecation

(NOTE: Answers to "o" through "bb" are on this page.)

_____o. Growths attached to the mucous membranes of the nose, bladder, colon, or uterus

_____p. Introduction of fluid into the rectum and colon

_____q. Frequent movement of the bowels; increased number of stools per day, often liquid or semi-liquid

_____r. Inflammation of the colon

_____s. Artificially created opening between a body cavity and the body's surface to divert feces, urine, or both

_____t. Surgical operation that creates a new outside opening or stoma

_____u. Incision into the colon to form an artificial anus or stoma

_____v. Incision into the ileum of the small intestine to form an artificial anus or stoma

_____w. Examination of the rectum with a special instrument

_____x. Examination of the sigmoid with a special instrument

_____y. Collection of hardened feces in the rectum and/or sigmoid

_____z. One closer to the stomach

____aa. One nearer the colon or rectum

____bb. Any abnormal tubelike passage within body tissue

15. Ostomy
16. Sigmoidoscopy
17. Fistula
18. Ileostomy
19. Enema
20. Polyps
21. Distal stoma
22. Diarrhea
23. Proximal stoma
24. Colostomy
25. Stoma
26. Proctoscopy
27. Colitis
28. Fecal impaction

2. Discuss the transmission of urine to the bladder.

3. Describe the storage and emptying of urine from the bladder.

4. Discuss the rectal reflex.

5. List seven factors which inhibit elimination in the hospital setting.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

6. List six nursing responsibilities related to urination and defecation.

   a.

   b.

   c.

   d.

   e.

   f.

7. List three characteristics to observe about urination.

   a.

   b.

   c.

8. List four characteristics to observe about defecation.

   a.

   b.

   c.

   d.

9. List six nursing measures to aid elimination.

   a.

   b.

   c.

   d.

   e.

   f.

10. List three possible reasons for keeping an accurate urinary output.

    a.

    b.

    c.

11. List seven points to remember in giving and/or removing a bedpan or urinal.

    a.

    b.

    c.

    d.

    e.

    f.

    g.

12. Describe two classes of enemas, giving two types of each.

a.

1)

2)

b.

1)

2)

13. Discuss three other rectal procedures.

a.

b.

c.

14. List three conditions which may require an ostomy.

a.

b.

c.

15. Discuss the differences between an ileostomy and a colostomy.

16. Discuss the general care of ostomies.

17. List seven nursing responsibilities in assisting the patient to adjust to an ostomy.
    a.
    b.
    c.
    d.
    e.
    f.
    g.

18. List three purposes of colostomy irrigations.
    a.
    b.
    c.

19. List four general points to remember concerning colostomy irrigations.
    a.
    b.
    c.
    d.

20. Demonstrate the ability to:
    a. Give and remove a bedpan and/or urinal.
    b. Assist the patient to the bathroom.
    c. Assist the patient in using the commode.
    d. Give a cleansing enema.
    e. Give a retention enema.
    f. Give a rectal tube.
    g. Give a rectal suppository.
    h. Give a colostomy irrigation.
    i. Remove a fecal impaction.

BODY ELIMINATION
UNIT X

ANSWERS TO TEST

1.

a.	4	h.	12	o.	20	v.	18
b.	7	i.	9	p.	19	w.	26
c.	14	j.	2	q.	22	x.	16
d.	11	k.	6	r.	27	y.	28
e.	10	l.	13	s.	25	z.	23
f.	1	m.	8	t.	15	aa.	21
g.	5	n.	3	u.	24	bb.	17

2. Discussion should include:

   a. Urine, formed by the kidneys, is forced along the ureters by peristalsis

   b. When disease or congenital abnormalities destroy the ability of the ureteral wall to contract, the urine collects in the pelvis of the kidney

3. Description should include:

   a. The urinary bladder provides for storage of urine thereby preventing constant dribbling

   b. The urethra is surrounded by two muscular sphincters, the internal sphincter which is controlled by the autonomic nervous system and the external sphincter which is controlled consciously by the brain

   c. The urinary bladder is capable of expanding to hold a liter or more

   d. When the bladder fills to 200 cc to 400 cc, special nerve receptors in the bladder wall become stimulated

   e. Afferent nerve impulses are transmitted to the spinal cord causing both a conscious desire to urinate and a subconscious reflex called the micturition reflex

   f. In turn, efferent impulses are transmitted to the bladder wall causing it to contract and to the internal sphincter causing it to relax

   g. Then the only thing hindering urination is the still contracted external sphincter

   h. Usually by conscious control the person can postpone the desire to urinate, at least for a time

   i. However, as the bladder becomes more filled the micturition reflex becomes so powerful that it cannot be consciously subdued and urination occurs

4. Discussion should include:

   a. Rectal control is similar to urethral control with an internal and external sphincter

   b. When the sigmoid and the rectum become distended with fecal material, afferent impulses are transmitted to the spinal cord which in turn excites the muscle walls of the rectum to contract and the internal sphincter to relax

   c. The external sphincter is consciously controlled and in the normal person these rectal reflexes can be inhibited adversely until constipation results

5. Any seven of the following

   a. Lack of privacy

   b. Limited mobility

   c. Immobility as in traction or casts

   d. Diet changes

   e. Medications such as narcotics or barbiturates

   f. Fluid intake

   g. Recumbent position for prolonged periods

   h. Weakness because of illness or surgery

   i. Psychological or emotional stress

6. Any six of the following

   a. Provide privacy for the patient during elimination

   b. Assist patient with daily elimination needs
   c. Provide opportunity for elimination at regular intervals to prevent bladder distention and constipation
   d. Establish a routine in an effort to control incontinence
   e. Keep a daily record of elimination
   f. Assist with keeping intake and output records
   g. Observe abnormalities in urine or feces
   h. Collect urine or feces for laboratory examination
   i. Assist in determining adequacy of elimination

7. Any three of the following
   a. Amount of urine
   b. Frequency, urgency, discomfort, or pain
   c. Color and transparency of urine
   d. Unusual odor of urine

8. Any four of the following
   a. Number of movements per day
   b. Consistency, shape, color, and odor
   c. Presence of any unusual matter such as blood or mucus
   d. Expulsion of flatus
   e. Symptoms of pain, abdominal distention, or cramping

9. Any six of the following
   a. Assuring patient of absolute privacy
   b. Proper positioning on bedpan
   c. Offering bedpan at regular intervals
   d. Giving bedpan to patient promptly when requested
   e. Insuring adequate fluid intake

f. Encouraging patient to eat a well-balanced diet

g. Encouraging patient to move about and assisting with exercise

h. Assisting patient to use commode or toilet if permitted

i. Administration of enemas or suppositories as prescribed

10. a. Provide an accurate record of kidney function

b. Check on the effectiveness of drugs such as diuretics

c. Indicate whether bladder is emptying properly

11. Any seven of the following

a. If bedpan is metal, warm before placing under patient

b. Provide for privacy

1) Close door of room

2) Screen patient

c. Do not keep patient waiting for bedpan or urinal; distention of bladder and rectum weakens the tone of the sphincter muscles and can lead to incontinence

d. Elevate head of bed so patient is in sitting position if permitted

e. Leave patient while he is on the bedpan but stay nearby or check frequently to see if he needs assistance or is finished

f. Do not leave patient on bedpan too long

g. Provide toilet tissue

h. Always use bedpan cover when taking bedpan to and from a patient's room

i. Check to see if accurate output is ordered

j. Allow patient to wash his hands after using bedpan, urinal, or bathroom

12. Description should include:

a. Nonretention or cleansing--For softening and removal of feces from the colon and rectum

Any two of the following

1) Soapsuds
2) Physiologic saline
3) Carminative
4) Hypertonic solutions of salts

b. Retention--For injecting prescribed lubricants or medications into the colon and/or rectum

Any two of the following

1) Lubricating
2) Anthelmintic
3) Emollient
4) Medicated

13. Discussion should include:

a. Using rectal tube to aid in expulsion of flatus

    1) May be used in conjunction with the administration of medication which stimulates peristalsis
    2) Rectal tube should not remain in place more than thirty minutes
    3) If needed, may be reinserted after several hours

b. Inserting suppository

    1) May be used to stimulate bowel action, relieve pain, or soothe the rectum
    2) Suppository must be inserted to a position above the anal sphincter and along the wall of the rectum
    3) Suppository to stimulate bowel action is more effective if given thirty to sixty minutes prior to mealtime
    4) Those given to relieve pain and soothe the rectum are intended to be retained for an indefinite length of time

c. Removal of fecal impaction

1) Symptoms of fecal impaction may be absence of bowel movement for two or more days or the passage of small amounts of semi-liquid stool

2) Person examining for or removing fecal impaction should wear gloves which are lubricated well

3) Careful, gentle manipulation while breaking the mass will help to minimize the discomfort being experienced by the patient

4) Manual removal may be followed by a cleansing enema

5) Impactions usually occur in patients who are not fully aware of their surroundings

6) Prevention of fecal impactions through the promotion of regular evacuation is the best treatment

14. Any three of the following

a. Obstruction of the bowel or ureter

b. Severe inflammation or irritation of the small intestine or colon

c. Traumatic injury of abdominal organs

d. Benign or malignant tumor of the abdomen

e. Fistulas or congenital defects

15. Discussion should include:

a. Ileostomy

1) Usually all the colon has been removed

2) Stoma is usually smaller and is located on the right side

3) Discharge will be liquid or semi-liquid

4) Collecting pouch will be needed at all times and will require emptying at three to four hour intervals or more often as needed

5) Never irrigated

6) Usually permanent

b. Colostomy

1) Part of the colon has been removed

2) Stoma is usually on the left side of the abdomen

3) After regulation, feces is usually of formed consistency

4) After regulation, the stoma is covered with a small dressing or other device for protection

5) Usually irrigated at specific intervals

6) May be permanent or temporary

16. Discussion should include:

a. Dressings must be changed frequently to keep the patient clean, dry, and free from offensive odors

b. Skin surrounding the stoma should be cleansed with water; when soap is used, it should be mild and should be rinsed off thoroughly

c. Amount and type of drainage should be observed and recorded

d. Odor may be minimized by cleanliness and dietary adjustment; when prescribed, tablets containing charcoal, chlorophyl, or bismuth may be taken orally or used in the drainage bag

e. Skin must be dry before putting on an adhesive appliance so it will adhere properly

f. Skin should be taut to avoid wrinkles under the adhesive

g. When caring for a patient with a regulated colostomy, follow his routine as closely as possible

17. Any seven of the following

a. Accept his procedure and provide care without showing repugnance or distaste

b. Encourage him to talk about his worries and to ask questions

c. Change dressings as often as needed for patient comfort and to avoid odors

d. Avoid dressing changes at mealtime

e. Provide care until patient is ready mentally and physically to assume the responsibility

f. Allow him to assist when he is able and instruct him as needed

g. Patient will need time to adjust to this extreme change in his manner of living; support and encourage him and his family

h. Insofar as possible the patient should determine the time for his care to allow for adjustment to his lifestyle

i. When possible, a member of the patient's family should receive instruction in his care also

j. High-residue foods or foods which cause flatus or diarrhea are usually avoided

18. a. Cleansing the colon of fecal material

b. Aiding in establishing regular bowel habits

c. Prevention of bowel obstruction

19. Any four of the following

a. Procedure should be done at the same time each day

b. Approximately thirty minutes is required for the procedure

c. When irrigations are done regularly, control can usually be established in three to ten days; after regulation, irrigations are usually required once every day or two

d. Skin around the stoma must be protected from the irritating fecal material

e. As soon as the colostomy is working, the patient should be fitted with an appliance to collect fecal material

f. Frequency of irrigations is regulated according to the patient's needs

g. Routinely only the proximal stoma is irrigated; the distal stoma is seldom irrigated

20. Performance skills will be evaluated to the satisfaction of the instructor.

VITAL SIGNS
UNIT XI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss the importance of vital signs and list factors that influence them. The student should be able to list sites for taking pulse and blood pressure and demonstrate the ability to take vital signs without error. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with vital signs to the correct definition.
2. Discuss the importance of vital signs.
3. Discuss the regulation of body temperature.
4. List indications for taking temperatures in each of the three sites.
5. List contraindications for taking temperatures in each of the three sites.
6. Match terms to the correct temperature range.
7. List eight factors which influence temperature.
8. List four sites where the pulse may be taken.
9. Match average pulse rates to age group.
10. List four factors which influence heart rate and pulse rate.
11. List six factors which affect respiration.
12. Match terms used to describe respiration to the correct description.
13. List nine factors which affect blood pressure.
14. Describe the three pressures involved in measuring blood pressure.
15. Name two sites where blood pressure may be taken.
16. Read Fahrenheit thermometers.
17. Chart temperature, pulse, respirations, and blood pressure.

18. Compare Fahrenheit and centigrade thermometers.
19. Read centigrade thermometers.
20. Demonstrate the ability to:
    a. Take oral temperature.
    b. Take rectal temperature.
    c. Take axillary temperature.
    d. Take pulse and respirations.
    e. Take apical pulse.
    f. Clean thermometers.
    g. Take blood pressure.

VITAL SIGNS
UNIT XI

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information, assignment, and job sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. Discuss and assist with assignment sheets.

  F. Provide graphic sheets for Assignment Sheet #2.

  G. Demonstrate and discuss procedures outlined on the job sheets.

  H. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Complete assignment sheets.

  E. Demonstrate the ability to perform the procedures outlined on the job sheets.

  F. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Assignment sheets

    1. Assignment Sheet #1--Read Fahrenheit Thermometers

2. Assignment Sheet #2--Chart Temperature, Pulse, Respirations, and Blood Pressure

3. Assignment Sheet #3--Compare Fahrenheit and Centigrade Thermometers

4. Assignment Sheet #4--Read Centigrade Thermometers

D. Answers to assignment sheets

E. Job sheets

1. Job Sheet #1--Take Oral Temperature

2. Job Sheet #2--Take Rectal Temperature

3. Job Sheet #3--Take Axillary Temperature

4. Job Sheet #4--Take Pulse and Respirations

5. Job Sheet #5--Take Apical Pulse

6. Job Sheet #6--Clean Thermometers

7. Job Sheet #7--Take Blood Pressure

F. Test

G. Answers to test

II. References

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Langley, et al. *Dynamic Anatomy and Physiology.* New York: McGraw-Hill Book Company, 1969.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. Wood, Lucile A. *Nursing Skills for Allied Health Services.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1972.

III. Filmstrips

A. "Temperature, Pulse, and Respiration." Trainex Corporation.

B. "Blood Pressure." Trainex Corporation.

VITAL SIGNS
UNIT XI

INFORMATION SHEET

I. Terms and definitions

   A. Pyrexia--Elevation of body temperature above normal

   B. Febrile--Feverish, pertaining to a fever

   C. Intermittent fever--One that alternates between fever and normal or subnormal body temperature

   D. Remittent fever--One that rises several degrees above normal, then drops a little but does not reach normal body temperature

   E. Continued fever--One that stays elevated above normal body temperature

   F. Crisis--Sudden drop from pyrexia to normal body temperature

   G. Lysis--Gradual return from pyrexia to normal body temperature

   H. Hypothermia--Below normal body temperature

   I. Pulse--Beat of the heart as felt through the walls of the arteries

   J. Rate--Number of pulse, heartbeats, or respirations per minute

   K. Rhythm--Regularity or irregularity of the pulse, heartbeat, or respirations

   L. Quality--Volume; strength of pulse beats

   M. Arrhythmia--Uneven intervals between pulse or heartbeats

   N. Apical pulse--Heart rate counted at the apex of the heart by using a stethoscope

   O. Pulse deficit--Difference between pulse counts taken simultaneously at two sites, usually radial and apical pulses

   P. Tachycardia--Heart rate consistently above normal

   Q. Bradycardia--Abnormally slow heart rate

   R. Respiration--Breathing; the inspiration and expiration of air involving the muscles of the chest and abdomen

   S. Blood pressure--Force the blood exerts against a vessel wall as the heart beats

   T. Body temperature--Balance between heat produced and heat lost by the body

INFORMATION SHEET

U. Sphygmomanometer--Instrument used to measure blood pressure

V. Stethoscope--Instrument used to listen to the sounds produced by the heart, lungs, and other internal organs

W. Hypertension--High blood pressure

X. Hypotension--Low blood pressure

II. Importance of vital signs

A. Vital signs or cardinal symptoms include temperature, pulse, respirations, and blood pressure

B. Change in one of the vital signs may affect the others

C. Deviation from normal rates usually indicates presence of a disease or infection

D. Variations of certain vital signs are so typical of some diseases or stages of diseases that diagnosis and medical care plan can be dependent upon these symptoms

E. Accurate measurement of the vital signs is an important aid in the evaluation of a patient's condition

F. Vital signs may be checked only once or twice a day; in cases of severe illness they are checked every four hours or more often as ordered by physician or charge nurse

III. Regulation of body temperature

A. Heat is produced by the oxidation of digested food and by muscle and gland activity; some heat may be obtained from the environment

B. Heat is lost through respirations, excreta, and warming cold beverages and foods which are consumed; the greatest amount of heat loss is through the skin

C. When heat production and heat loss are in balance, the temperature is normal, between 97.6° to 99°F or 36° to 38°C

D. The body functions most efficiently at normal temperature

E. Body temperature is regulated by the hypothalamus and the autonomic nervous system

(NOTE: The hypothalamus functions as a thermostat and the autonomic nerves supply the circuit which regulates heat loss.)

INFORMATION SHEET

IV. Sites and indications for taking temperature in each site

- A. Oral cavity
  1. Simplest
  2. Most convenient
  3. Most comfortable
- B. Rectum
  1. Most accurate
  2. Safest
  3. Usually used for children under six years of age
  4. May be used when temperature is elevated
- C. Axilla--Used only when temperature cannot be taken orally or rectally

V. Contraindications for taking temperatures in each site

- A. Oral cavity
  1. Difficulty in breathing
  2. Oral or nasal surgery, infection, or disease
  3. Unconsciousness, confusion, mental illness, or senility
  4. Extreme weakness
  5. During administration of oxygen
- B. Rectum
  1. Rectal or perineal surgery, disease, infection, or inflammation
  2. Rectal distention with fecal material
  3. Diarrhea
- C. Axilla--Least accurate

INFORMATION SHEET

VI. Body temperature ranges

A. Normal oral--97.6° to 99°F; 36.4° to 37.2°C

B. Normal rectal--99.6°F; 37.5°C

C. Normal axillary--97.6°F; 36.4°C

D. Subnormal--Below 97°F; 36.2°C (oral)

E. Moderate fever--100° to 103°F; 37.7° to 39.4°C (oral)

F. High fever--103° to 105°F; 39.4° to 40.5°C (oral)

(NOTE: Rectal temperatures average one degree higher than oral temperatures; axillary temperatures average one degree lower than oral.)

VII. Factors which influence body temperature

A. External environment

(NOTE: Room temperature, ventilation, amount of clothing, and humidity affect body temperature.)

B. Internal environment

(NOTE: Body temperature is affected by such things as amount of adipose tissue, illness, and fluid and electrolyte balance.)

C. Sex

(NOTE: Women usually have a higher temperature than men.)

D. Age

(NOTE: Heat-regulating mechanism is not fully developed in infants and young children; in aged, heat-regulating mechanism becomes less efficient.)

E. Strong emotions

(NOTE: Excitement, anxiety, nervousness, and other emotions cause increased activity of the secreting glands which increases heat production.)

F. Time of day

(NOTE: Body temperature is usually highest in mid-afternoon and lowest during the night.)

G. Exercise and digestive processes

(NOTE: Increased activity elevates body temperature.)

INFORMATION SHEET

H. Infection or disease

(NOTE: Infection and disease processes may increase or decrease body temperature.)

I. Hot or cold foods

(NOTE: Hot or cold foods taken within fifteen to thirty minutes prior to taking an oral temperature will cause an inaccurate reading.)

J. Mouth breathing

(NOTE: The dry, cooled mouth of a mouth-breathing person will not register an accurate temperature.)

K. Smoking

(NOTE: Smoking prior to an oral temperature taking will give an inaccurate reading.)

VIII. Sites for taking the pulse (refer to diagram on the following page)

A. Temporal--Just above the anterior portion of the ear

B. Facial--Near the notch in the mandible

C. Carotid--On the side of the neck

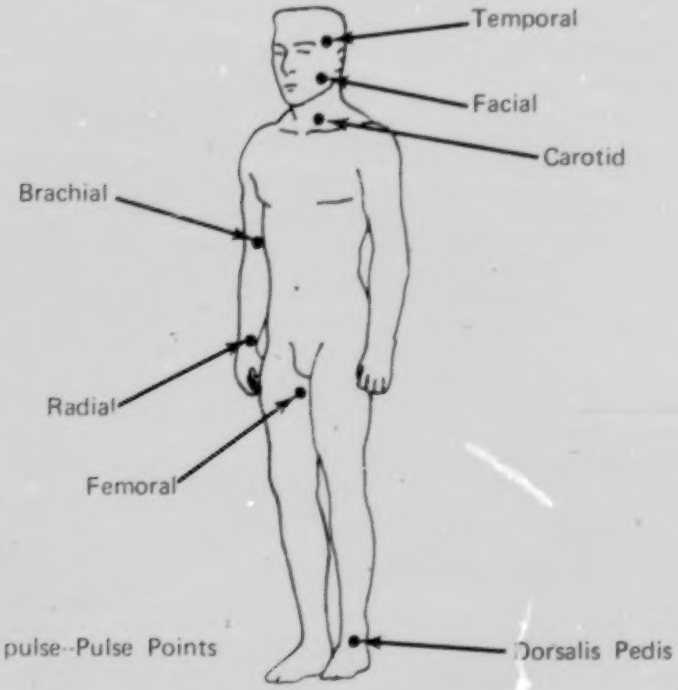
D. Brachial--Inner arm above the elbow

E. Radial--Inner surface of wrist on thumb side

F. Femoral--Inner thigh just below the groin

INFORMATION SHEET

G. Dorsalis pedis--On top of foot lateral to tendon of the large toe


Temporal
Facial
Carotid
Brachial
Radial
Femoral
Dorsalis Pedis

Sites for taking pulse--Pulse Points

IX. Range of average pulse rates

- A. Men--60 to 70
- B. Women--65 to 80
- C. Children over seven--72 to 90
- D. Children one to seven--80 to 120
- E. Infants--110 to 130

X. Factors which influence heart rate and pulse rate

- A. Activity
- B. Emotions
- C. Some drugs

(NOTE: Caffeine increases and digitalis decreases heart rate.)

INFORMATION SHEET

D. Endocrine disturbances

(NOTE: Hyperthyroidism and hypothyroidism influence heart rate.)

E. Elevated temperature

(NOTE: Heart rate usually increases proportionately as temperature increases.)

F. Disorders of the heart and circulatory system

XI. Factors affecting respiration

A. Age

(NOTE: Rate for newborn may be 40 times per minute while the normal adult rate is 14 to 18 times per minute.)

B. Sex

(NOTE: Rate is usually faster in women.)

C. Exercise

D. Pain

E. Fever

F. Emotions

G. Heart disease

H. Respiratory disease

I. Drugs

XII. Terms used to describe respiration

A. Eupnea--Normal

B. Dyspnea--Difficult or labored

C. Apnea--Temporary cessation

D. Orthopnea--Condition in which breathing is possible only when the person sits or stands in an erect position

E. Stertor--Accompanied by abnormal snoring sounds

INFORMATION SHEET

F. Cheyne-Stokes--Uneven respirations from strong to weak with intervals of apnea

G. Rales--Bubbling or rattling sounds caused by mucus in the air passages as in bronchitis or pneumonia

H. Costal--Accomplished chiefly by the rib muscles

I. Stridor--Shrill, harsh sound especially during inspiration in laryngeal obstruction

XIII. Factors affecting blood pressure

A. Condition of the walls of the arteries and arterioles

(NOTE: Blood pressure usually increases with age.)

B. Rate of heartbeat

C. Exercise

D. Emotions

E. Sex

(NOTE: Blood pressure is usually higher in women.)

F. Hemorrhage

G. Shock

H. Drugs

I. Endocrine activity

J. Altitude

K. Smoking

L. Site where taken

XIV. Measuring blood pressure

A. Systolic pressure--Pressure at its peak during the contraction or systole of the heart

INFORMATION SHEET

B. Diastolic pressure--Pressure at its lowest when the heart is relaxed, the diastole

C. Pulse pressure--Difference between systolic and diastolic pressure

(NOTE: Normal values for the young adult are: systolic, 120 mm Hg; diastolic, 80 mm Hg; and pulse pressure, approximately 40 mm Hg. Pulse pressure more than 50 or less than 30 mm Hg is considered abnormal.)

XV. Sites for taking blood pressure

A. Over the brachial artery on the inner surface of the elbow

B. In the popliteal space with the cuff applied above the knee

C. In the lower leg over the tibial artery with the cuff applied below the knee

(NOTE: When blood pressure is not taken in the arm, the site should be recorded on the patient's chart.)

VITAL SIGNS
UNIT XI

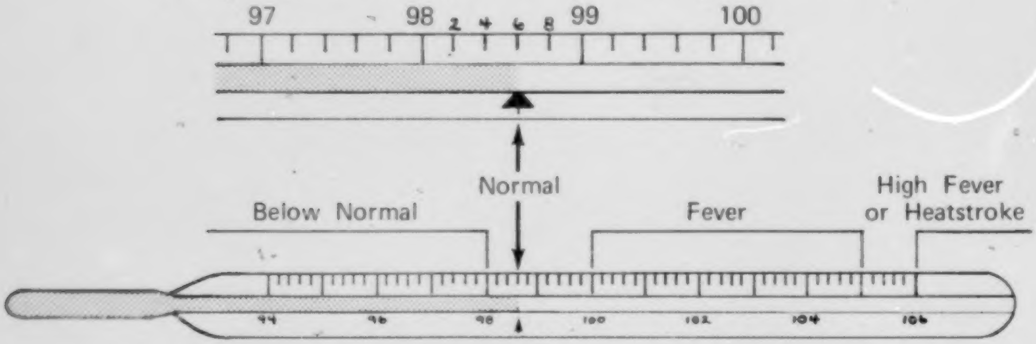
ASSIGNMENT SHEET #1--READ FAHRENHEIT THERMOMETERS

The clinical thermometer measures body temperature to the nearest two-tenths of a degree.

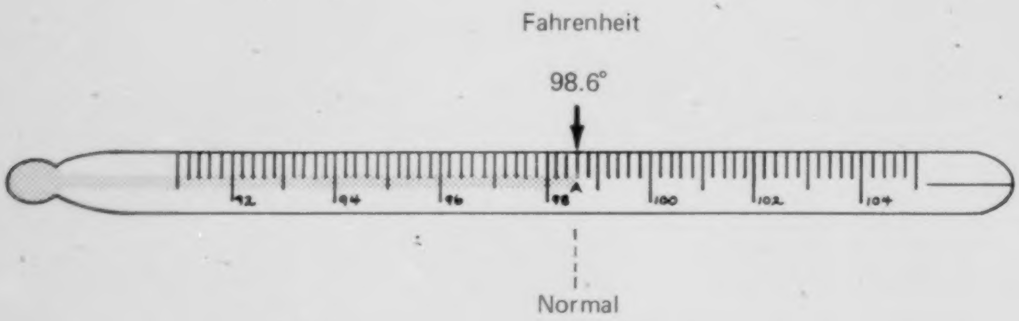
1. Procedure

   a. Hold thermometer at eye level. Rotate the thermometer until you can clearly see the column of mercury.

   b. Observe the markings called calibrations on the scale which is at the upper side of the column of mercury. Remember that each of the long lines represents a full degree and the four short lines represent 2/10 (0.2) of a degree. Only the even-numbered degrees are named on a Fahrenheit clinical thermometer, that is 96°, 98°, 100°, and so on.

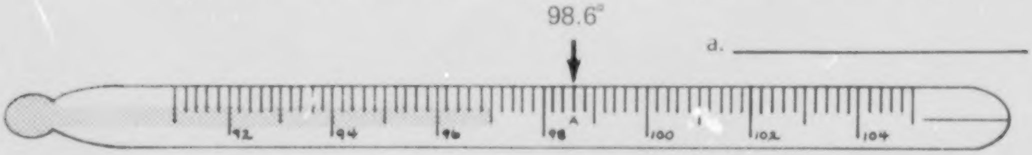

97
98
2
4
6
8
99
100
Normal
Below Normal
Fever
High Fever or Heatstroke
94
96
98
100
102
104
106

   c. If the mercury column ends at one of the short lines, look to see which long line is immediately to the left. That will tell you the degree of temperature, for example 98°F; then if the mercury level is at the second small line to the right of the 98°F mark, the temperature is 98.4°F. The temperature may also be written 98^4.

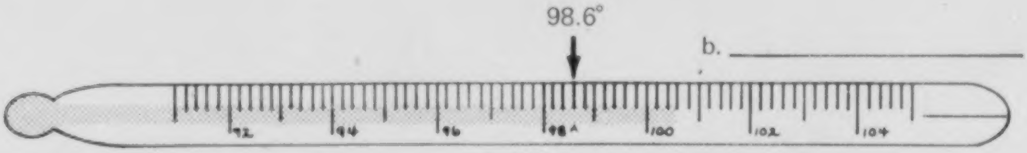

Fahrenheit
98.6°
92
94
96
98
100
102
104
Normal

ASSIGNMENT SHEET #1

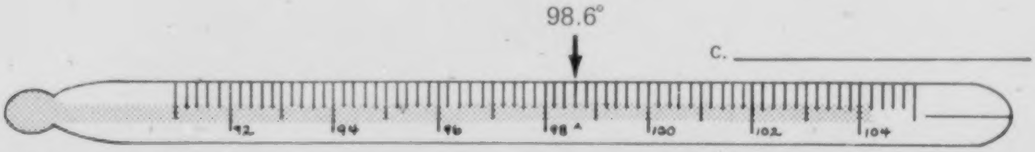
2. Write the readings on these thermometers in the blanks to the right.


98.6°
92
94
96
98
100
102
104

a. ____________________


98.6°
92
94
96
98
100
102
104

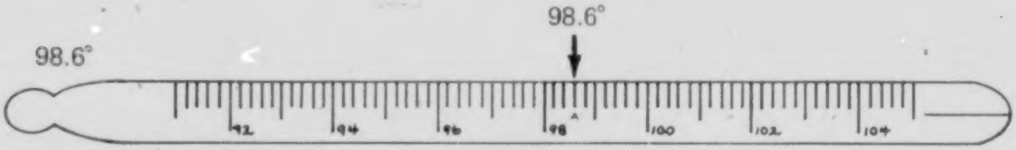
b. ____________________


98.6°
92
94
96
98
100
102
104

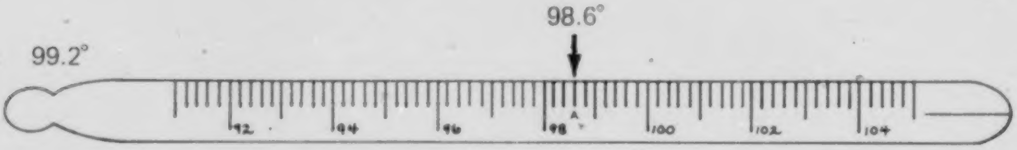
c. ____________________

3. Mark the temperature readings on these thermometers.

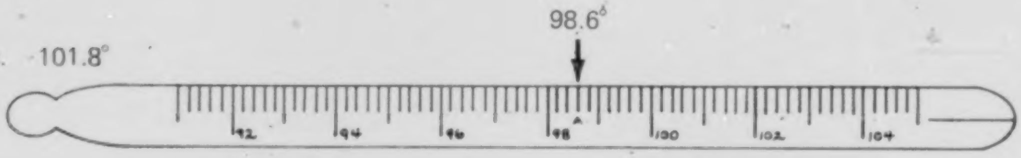
a. 98.6°


98.6°
92
94
96
98
100
102
104

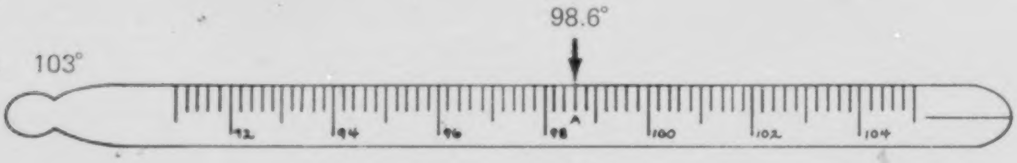
b. 99.2°


98.6°
92
94
96
98
100
102
104

c. 101.8°


98.6°
92
94
96
98
100
102
104

d. 103°


98.6°
92
94
96
98
100
102
104

VITAL SIGNS
UNIT XI

ASSIGNMENT SHEET #2--CHART TEMPERATURE, PULSE, RESPIRATIONS, AND BLOOD PRESSURE

Record the following TPRs and BPs on a graphic sheet.

8 a.m.	99.2 - 84 - 20	120/80
Noon	100.4 - 88 - 22	126/82
4 p.m.	102.6 - 102 - 28	132/86
8 p.m.	104.2^{R} - 128 - 32	140/98
10 p.m.	105^{R} - 136 - 38	
Midnight	103.8 - 130 - 36	144/100
2 a.m.	103 - 126 - 34	
4 a.m.	101.4 - 120 - 30	138/92
8 a.m.	99 - 92 - 24	128/88

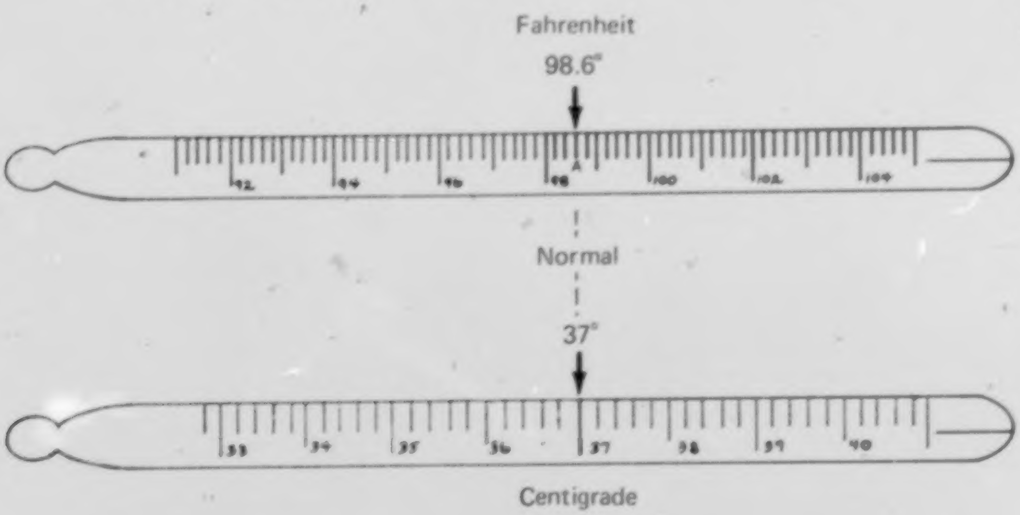
VITAL SIGNS
UNIT XI

ASSIGNMENT SHEET #3—COMPARE FAHRENHEIT AND CENTIGRADE THERMOMETERS

A thermometer is marked with either of two scales of measurement, Fahrenheit (F) or centigrade (C). Fahrenheit is more commonly used today but the use of centigrade thermometers is becoming more common.

1. In order to convert Fahrenheit readings to centigrade, subtract 32 from the reading and multiply by 5/9; thus $C^{\circ}=5/9\ (F^{\circ}-32)$.

2. To convert centigrade to Fahrenheit, multiply the centigrade reading by 9/5 and add 32; thus $F^{\circ}=(C^{\circ}\times 9/5)+32$.


Fahrenheit
98.6°
92
94
96
98
100
102
104
Normal
37°
33
34
35
36
37
38
39
40
Centigrade

3. Solve the following problems:

a. 99.2°F= ________°C

b. 102°F= ________°C

c. 97°F= ________°C

d. 39.4°C= ________°F

e. 38°C= ________°F

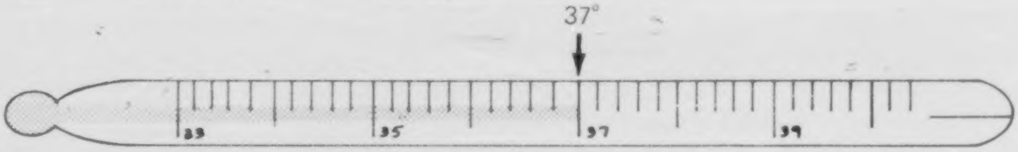
f. 37°C= ________°F

VITAL SIGNS
UNIT XI

ASSIGNMENT SHEET #4–READ CENTIGRADE THERMOMETERS

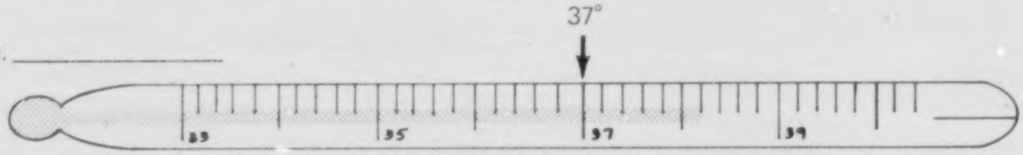
Observe the calibrations on the centigrade thermometer. Remember that each of the long lines represents a full degree and each short line represents 2/10 of a degree. Only the odd numbered degrees are indicated by number on the centigrade clinical thermometer.

(NOTE: The average normal temperature is 37° C.)

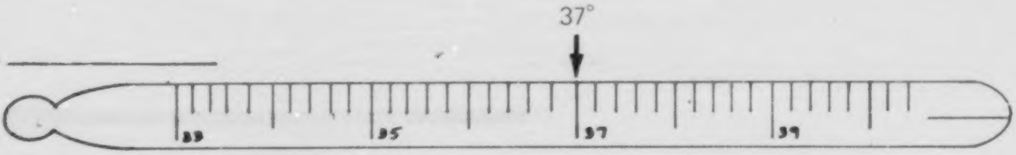

37°
33
35
37
39

1. What are these temperature readings?

a. ________________

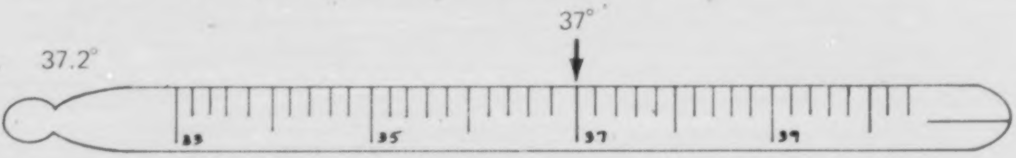

37°
33
35
37
39

b. ________________

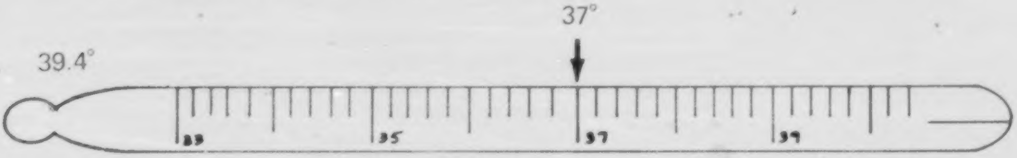

37°
33
35
37
39

2. Mark the temperature readings on these thermometers.

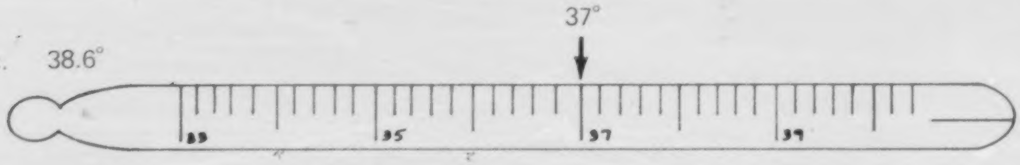
a. 37.2°


37°
33
35
37
39

b. 39.4°


37°
33
35
37
39

c. 38.6°


37°
33
35
37
39

VITAL SIGNS
UNIT XI

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

2. a. 97°F

   b. 100.6°F

   c. 104.2°F

3. Check each student's assignment sheet to see that the temperatures are marked correctly on the thermometer drawings.

Assignment Sheet #2--Check each student's graphic sheet to see that the TPRs have been correctly recorded.

Assignment Sheet #3

3. a. 37.4°C

   b. 39°C

   c. 36°C

   d. 103°F

   e. 100.4°F

   f. 98.6°F

Assignment Sheet #4

2. a. 38.2°C

   b. 36.6°C

3. Check each student's assignment sheet to see that temperatures are marked correctly on the thermometer drawings.

VITAL SIGNS
UNIT XI

JOB SHEET #1-TAKE ORAL TEMPERATURE

I. Equipment needed

A. Mercury-type thermometer and holder with antiseptic solution or electronic thermometer with plastic sheaths

B. Watch with second hand

C. Paper and pencil

D. Clean tissue

II. Procedure for mercury-type thermometer

A. Wash hands

B. Assemble equipment and take to bedside

C. Identify patient and explain procedure

(CAUTION: Do not take temperature if patient has recently taken hot or cold drink or is smoking.)

D. Remove thermometer from container, holding near the end opposite the mercury bulb; shake mercury down to 95° or below

E. Place mercury bulb under the patient's tongue; ask the patient to keep lips closed without biting the thermometer; leave thermometer in place for three minutes; remain with patient if necessary

(NOTE: Pulse and respirations may be counted at this time.)

F. Remove and wipe thermometer with tissue from stem to bulb; discard tissue

G. Read thermometer and record reading on paper immediately

H. Recheck temperature if indicated

I. Care for thermometer

1. Shake mercury down

2. Clean thermometer and place thermometer in holder

3. Replace equipment in designated area

JOB SHEET #1

J. Wash hands

K. Record temperature

L. Report unusual temperature to person in charge

III. Procedure for electric thermometer

A. Wash hands

B. Assemble equipment

C. Activate electric thermometer according to instructions

D. Put on clean protective sheath

E. Place tip of probe under patient's tongue for required length of time and record temperature on paper

F. Discard protective sheath

G. Recheck temperature if indicated

H. Replace equipment in designated area

I. Wash hands

J. Report unusually high or low temperature to person in charge

K. Record temperature

VITAL SIGNS
UNIT XI

JOB SHEET #2--TAKE RECTAL TEMPERATURE

I. Equipment needed

   A. Container with clean rectal thermometer

   B. Clean tissue

   C. Lubricant

   D. Paper and pen

   E. Watch with second hand

II. Procedure

   A. Wash hands

   B. Assemble equipment

   C. Identify patient and explain procedure

   D. Position patient

      1. Place adult patient on his side and flex upper knee

      2. Place child on abdomen with face to side unless physical condition makes it inadvisable

   E. Expose rectal area

   F. Raise upper buttocks so anus is clearly seen and insert lubricated bulb gently into rectum about 1 1/2 inches

   G. HOLD thermometer in place for 3 to 5 minutes

   (CAUTION: Do not leave patient while rectal temperature is being taken. If the patient moves and the thermometer is not being held, it can slip inside which could injure the rectum or require surgical removal.)

   H. Remove thermometer; wipe with clean tissue from stem to bulb; discard tissue

   I. Read thermometer

JOB SHEET #2

J. Wash thermometer in cool water; replace in holder

K. Wash hands

L. Record temperature reading on paper

M. Make patient comfortable

N. Wash hands

O. Record temperature and report any significant elevation; indicate on record that temperature was taken rectally (R)

(NOTE: When electric thermometer is used, follow manufacturer's instructions.)

VITAL SIGNS
UNIT XI

JOB SHEET #3–TAKE AXILLARY TEMPERATURE

I. Equipment needed

   A. Clean thermometer

   B. Thermometer holder

   C. Watch with second hand

   D. Paper and pen

II. Procedure

   A. Wash hands

   B. Assemble equipment and take to bedside

   C. Identify patient and explain procedure

   D. Position patient so he is comfortable; be sure axilla is dry

   (NOTE: If axilla is wet, pat dry. Excessive rubbing will generate heat.)

   E. Place thermometer in axilla

      1. Leave thermometer in place for ten minutes

      2. Have patient hold his arm tightly against his chest

   F. Remove thermometer, wipe, read, and record temperature indicating (ax) on paper

   G. Leave patient in a comfortable position

   H. Clean thermometer and return equipment to designated area

   I. Wash hands

   J. Record temperature remembering to put (ax) above temperature; report any significant elevation

   (NOTE: When electric thermometer is used, follow manufacturer's instructions.)

VITAL SIGNS
UNIT XI

JOB SHEET #4--TAKE PULSE AND RESPIRATIONS

I. Equipment needed

  A. Watch with second hand

  B. Pad and pencil

II. Procedure

  A. Wash hands

  B. Assemble equipment and take to bedside

  C. Identify patient and explain procedure

  D. Place patient's arm across his chest

  E. Place tips of first two fingers over radial artery on thumb side of wrist exerting slight pressure

  (NOTE: Do not use thumb.)

  F. When pulse is felt, count for one minute timing with second hand of watch

  G. After counting and while still holding pulse, count respirations

  H. Record immediately on paper

  I. Wash hands

  J. Report pulse or respirations and any unusual observations

  K. Record

VITAL SIGNS
UNIT XI

JOB SHEET #5--TAKE APICAL PULSE

I. Equipment needed

  A. Stethoscope

  B. Watch with second hand

  C. Paper and pen

II. Procedure (requires two persons counting simultaneously)

  A. Wash hands

  B. Assemble equipment

  C. Identify patient and explain procedure

  D. Provide privacy; uncover left side of chest with patient in supine position

  E. First person

    1. Locate apex of heart by placing fingertips on patient's chest below left nipple about the fifth intercostal space

    2. Insert ear pieces of stethoscope in your ears, place bell over apical region, and listen for heart sounds

    3. On signal, count the beats for one full minute; note the rate, rhythm, and strength of beat

  F. On signal, second person counts radial pulse

  G. Record on paper immediately

    1. Radial pulse rate, rhythm, and strength

    2. Apical pulse rate, rhythm, and strength

    3. Pulse deficit

  H. Make patient comfortable

  I. Clean and return equipment to designated area

  J. Wash hands

  K. Report and record procedure and observations

VITAL SIGNS
UNIT XI

JOB SHEET #6--CLEAN THERMOMETERS

I. Equipment needed

  A. Two small basins

  B. Soap

  C. Cotton balls

  D. Disinfectant

  E. Thermometers

II. Safety factors

  A. Always use cool tap water

  B. Handle with care to avoid breakage

  C. Clean rectal thermometers separately from oral thermometers

III. Procedure

  A. Assemble equipment

    1. Use cool water and soap to fill one basin

    2. Fill other basin with disinfectant

  B. Wash thermometers in soapy water using cotton balls; rinse with cool water

  C. Place thermometers in disinfectant so all are covered; leave for required length of time

  D. Remove thermometers from disinfectant, rinse with cold water, and dry

  E. Store thermometer in designated place

  F. Replace equipment

  G. Wash hands

  (CAUTION: When thermometers are kept in the patient's room, they should be washed after each use before storing.)

VITAL SIGNS
UNIT XI

JOB SHEET #7-TAKE BLOOD PRESSURE

I. Equipment needed

   A. Sphygmomanometer

   B. Stethoscope

   C. Paper and pen

II. Procedure

   A. Wash hands

   B. Assemble equipment and take to bedside

   C. Identify patient and explain procedure

      (NOTE: Patient should be lying down or sitting with the arm supported by bed, table, or arm of chair.)

   D. Apply cuff snugly to arm (preferably the left) above the elbow with rubber bladder of cuff over brachial artery

   E. Place ear pieces of stethoscope in your ears; tighten the screw on the rubber bulb of the sphygmomanometer

   F. Locate brachial artery pulse with fingertips and place diaphragm or bell of stethoscope over pulse beat

   G. Inflate cuff by squeezing the bulb until the pulse ceases, then inflate cuff 20 points higher

   H. Open the valve (thumb screw) slowly releasing the air until thumping sound is heard

   I. Observe and remember the number where the sound is heard; this is the systolic pressure

   J. Continue to listen while releasing the air gradually from the cuff

   K. Observe number where sound becomes muffled or dull; this is the diastolic pressure

JOB SHEET #7

L. Allow air to escape so pressure falls to 0

M. Wait one minute with cuff deflated, then repeat the procedures

N. Record readings immediately on paper

(NOTE: The top or larger number is written as the top number of a fraction or is written first as 120/ . The bottom number is written as the lower number of a fraction or is written second as /80.)

O. Remove cuff from patient's arm and make him comfortable

P. Clean and return equipment to designated area

Q. Wash hands

R. Record and report blood pressure and any unusual observation

VITAL SIGNS
UNIT XI

TEST

1. Match the terms on the right to the correct definition.

_____a. Feverish; pertaining to a fever

_____b. Sudden drop from pyrexia to normal body temperature

_____c. Heart rate counted at the apex of the heart by using a stethoscope

_____d. Below normal body temperature

_____e. One that alternates between fever and normal or subnormal body temperature

_____f. Regularity or irregularity of the pulse, heartbeat, or respirations

_____g. Instrument used to listen to the sounds produced by the heart, lungs, and other internal organs

_____h. Abnormally slow heart rate

_____i. High blood pressure

_____j. Difference between pulse counts taken simultaneously at two sites, usually radial and apical pulses

_____k. One that stays elevated above normal body temperature

_____l. Heart rate consistently above normal

_____m. Elevation of body temperature above normal

_____n. Gradual return from pyrexia to normal body temperature

_____o. Breathing; the inspiration and expiration of air involving the muscles of the chest and abdomen

1. Pyrexia
2. Rate
3. Bradycardia
4. Blood pressure
5. Febrile
6. Remittent fever
7. Apical pulse
8. Respiration
9. Pulse
10. Intermittent fever
11. Crisis
12. Quality
13. Pulse deficit
14. Stethoscope
15. Continued fever
16. Hypothermia
17. Hypotension
18. Lysis
19. Rhythm
20. Tachycardia
21. Arrhythmia
22. Hypertension
23. Sphygmomanometer
24. Body temperature

_____p. Force the blood exerts against a vessel wall as the heart beats

_____q. Instrument used to measure blood pressure

_____r. Uneven intervals between pulse or heartbeats

_____s. Low blood pressure

_____t. Number of pulse, heartbeats, or respirations per minute

_____u. Volume; strength of pulse beats

_____v. Beat of the heart as felt through the walls of the arteries

_____w. One that rises several degrees above normal, then drops a little but does not reach normal body temperature

_____x. Balance between heat produced and heat lost by the body

2. Discuss the importance of vital signs.

3. Discuss the regulation of body temperature.

4. List indications for taking temperatures in each of the three sites.

   a.

   b.

   c.

5. List contraindications for taking temperatures in each of the three sites.

   a.

   b.

   c.

6. Match the descriptive term on the right to the correct temperature range.

_____a. 103° to 105°F; 39.4° to 40.5°C (oral)

_____b. Below 97°F; 36.2°C (oral)

_____c. 97.6° to 99°F; 36.4° to 37.2°C

_____d. 100° to 103°F; 37.7° to 39.4°C (oral)

_____e. 99.6°F; 37.5°C

_____f. 97.6°F; 36.4°C

1. Normal rectal
2. Normal axillary
3. High fever
4. Normal oral
5. Subnormal
6. Moderate fever

7. List eight factors which influence temperature.

a.

b.

c.

d.

e.

f.

g.

h.

8. List four sites where the pulse may be taken.

a.

b.

c.

d.

9. Match the average pulse rates on the right to the correct age group.

_____a. Children one to seven

_____b. Women

_____c. Children over seven

_____d. Men

_____e. Infants

1. 60 to 70
2. 72 to 90
3. 110 to 130
4. 65 to 80
5. 80 to 120

10. List four factors which influence heart rate and pulse rate.

a.

b.

c.

d.

11. List six factors which affect respiration.

a.

b.

c.

d.

e.

f.

12. Match the terms on the right to the correct description.

______a. Temporary cessation

______b. Uneven respirations from strong to weak with intervals of apnea

______c. Condition in which breathing is possible only when the person sits or stands in an erect position

______d. Normal

______e. Difficult or labored

______f. Accompanied by abnormal snoring sounds

______g. Accomplished chiefly by the rib muscles

______h. Bubbling or rattling sounds caused by mucus in the air passages as in bronchitis or pneumonia

______i. Shrill, harsh sound especially during inspiration in laryngeal obstruction

1. Stertor
2. Eupnea
3. Dyspnea
4. Rales
5. Apnea
6. Cheyne-Stokes
7. Orthopnea
8. Stridor
9. Costal

13. List nine factors which affect blood pressure.

    a.

    b.

    c.

    d.

    e.

    f.

    g.

    h.

    i.

14. Describe the three pressures involved in measuring blood pressure.

    a.

    b.

    c.

15. Name two sites where blood pressure may be taken.

    a.

    b.

16. Read Fahrenheit thermometers.

17. Chart temperature, pulse, respirations, and blood pressure.

18. Compare Fahrenheit and centigrade thermometers.

19. Read centigrade thermometers.

20. Demonstrate the ability to:

    a. Take oral temperature.

    b. Take rectal temperature.

    c. Take axillary temperature.

    d. Take pulse and respirations.

    e. Take apical pulse.

    f. Clean thermometers.

    g. Take blood pressure.

    (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

VITAL SIGNS
UNIT XI

ANSWERS TO TEST

1.

a.	5	i.	22	q.	23
b.	11	j.	13	r.	21
c.	7	k.	15	s.	17
d.	16	l.	20	t.	2
e.	10	m.	1	u.	12
f.	19	n.	18	v.	9
g.	14	o.	8	w.	6
h.	3	p.	4	x.	24

2. Discussion should include:

   a. Vital signs or cardinal symptoms include temperature, pulse, respirations, and blood pressure

   b. Change in one of the vital signs may affect the others

   c. Deviation from normal rates usually indicates presence of a disease or infection

   d. Variations of certain vital signs are so typical of some diseases or stages of diseases that diagnosis and medical care plan can be dependent upon these symptoms

   e. Accurate measurement of the vital signs is an important aid in the evaluation of a patient's condition

   f. Vital signs may be checked only once or twice a day; in cases of severe illness they are checked every four hours or more often as ordered by physician or charge nurse

3. Discussion should include:

   a. Heat is produced by the oxidation of digested food and by muscle and gland activity; some heat may be obtained from the environment

   b. Heat is lost through respirations, excreta, and warming cold beverages and foods which are consumed; the greatest amount of heat loss is through the skin

   c. When heat production and heat loss are in balance, the temperature is normal, between 97.6° to 99°F or 36° to 38°C

d. The body functions most efficiently at normal temperature

e. Body temperature is regulated by the hypothalamus and the autonomic nervous system

4. a. Oral cavity
    1) Simplest
    2) Most convenient
    3) Most comfortable
   b. Rectum
    1) Most accurate
    2) Safest
    3) Usually used for children under six years of age
    4) May be used when temperature is elevated
   c. Axilla–Used only when temperature cannot be taken orally or rectally

5. a. Oral cavity
    1) Difficulty in breathing
    2) Oral or nasal surgery, infection, or disease
    3) Unconsciousness, confusion, mental illness, or senility
    4) Extreme weakness
    5) During administration of oxygen
   b. Rectum
    1) Rectal or perineal surgery, disease, infection, or inflammation
    2) Rectal distention with fecal material
    3) Diarrhea
   c. Axilla–Least accurate

6. a. 3
   b. 5
   c. 4

- d. 6
- e. 1
- f. 2

7. Any eight of the following
   - a. External environment
   - b. Internal environment
   - c. Sex
   - d. Age
   - e. Strong emotions
   - f. Time of day
   - g. Exercise and digestive processes
   - h. Infection or disease
   - i. Hot or cold foods
   - j. Mouth breathing
   - k. Smoking
8. Any four of the following
   - a. Temporal
   - b. Facial
   - c. Carotid
   - d. Brachial
   - e. Radial
   - f. Femoral
   - g. Dorsalis pedis
9. a. 5
   - b. 4
   - c. 2
   - d. 1
   - e. 3

10. Any four of the following

    a. Activity

    b. Emotions

    c. Some drugs

    d. Endocrine disturbances

    e. Elevated temperature

    f. Disorders of the heart and circulatory system

11. Any six of the following

    a. Age

    b. Sex

    c. Exercise

    d. Pain

    e. Fever

    f. Emotions

    g. Heart disease

    h. Respiratory disease

    i. Drugs

12.

a.	5	d.	2	g.	9
b.	6	e.	3	h.	4
c.	7	f.	1	i.	8

13. Any nine of the following

    a. Condition of the walls of the arteries and arterioles

    b. Rate of heartbeat

    c. Exercise

    d. Emotions

   e. Sex

   f. Hemorrhage

   g. Shock

   h. Drugs

   i. Endocrine activity

   j. Altitude

   k. Smoking

   l. Site where taken

14. Description should include:

    a. Systolic pressure--Pressure at its peak during the contraction or systole of the heart

    b. Diastolic pressure--Pressure at its lowest when the heart is relaxed, the diastole

    c. Pulse pressure--Difference between systolic and diastolic pressure

15. Any two of the following

    a. Over the brachial artery on the inner surface of the elbow

    b. In the popliteal space with the cuff applied above the knee

    c. In the lower leg over the tibial artery with the cuff applied below the knee

16. Evaluated to the satisfaction of the instructor.

17. Evaluated to the satisfaction of the instructor.

18. Evaluated to the satisfaction of the instructor.

19. Evaluated to the satisfaction of the instructor.

20. Performance skills will be evaluated to the satisfaction of the instructor.

REST AND SLEEP
UNIT XII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss the value of rest and sleep and factors which interfere with them. The student should be able to list effects of lack of sleep and nursing measures which promote rest and sleep. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with rest and sleep to the correct definition.
2. Discuss the nature of sleep.
3. Discuss the value of rest and sleep.
4. Discuss factors which may interfere with rest and sleep.
5. List six effects of lack of sleep.
6. List ten nursing measures which can be used to promote rest and/or induce sleep.
7. List four points to remember in observing and recording rest and sleep.

REST AND SLEEP
UNIT XII

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Test

   D. Answers to test

II. References:

   A. Fuerst, Elinor V. and LuVerne Wolff. *Fundamentals of Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1964.

   B. Harmer, Bertha and Virginia Henderson. *Textbook of the Principles and Practice of Nursing.* New York: The Macmillan Company, 1967.

C. Mitchell, Pamela H. *Concepts Basic to Nursing.* New York: McGraw-Hill Book Company, 1973.

D. Price, Alice L. *The Art, Science, and Spirit of Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1965.

III. Filmstrip--"Pain-Sleep Series." Concept Media.

REST AND SLEEP
UNIT XII

INFORMATION SHEET

I. Terms and definitions

   A. Sleep--Periodic temporary cessation or interruption of the waking state

   B. Rest--Freedom from activity

   C. Insomnia--Inability to fall asleep or remain asleep throughout the night

   D. Barbiturate--One of a group of organic compounds derived from barbituric acid and commonly called sleeping pills

   (NOTE: Examples are phenobarbital and seconal.)

   E. Amphetamine--Chemical compound used as a central nervous system stimulant

   F. Disorientation--Loss of recognition of time, place, and persons

   G. Misperception--Faulty or inadequate awareness

   H. Confusion--Disturbed perception in regard to time, place, or person

II. Nature of sleep

   A. Recognized as the most beneficial type of rest

   B. Does not imply inactivity; although it is an interruption of the waking state, the body is active and functioning during sleep

   C. Comprised of cycles varying in length from one to two hours

   D. Sleep cycles are made up of two parts

      1. NREM or nonrapid-eye-movement phase which comprises eighty percent of each cycle

      2. REM or rapid-eye-movement phase which comprises the remaining twenty percent

   E. The sleeper gradually moves in a cycle from NREM to REM sleep as many as five or six times per night

   F. Sleep experts agree that the purpose of NREM sleep is rest and restoration of the body; the purpose of REM sleep is believed to be related to ability to withstand stress

INFORMATION SHEET

G. When a person is deprived of NREM sleep, he seems to tire more easily; when deprived of REM sleep, he becomes irritable and has difficulty in concentrating and coping with stress and may become disoriented

H. REM sleep may be decreased by

1. Alcoholic intake before bedtime
2. Barbiturates
3. Amphetamines
4. Allowing only short periods of sleep

III. Value of rest and sleep

A. Mental and physical rest is a physiological necessity

B. Body cells require periods of decreased activity in order to restore themselves

C. Lack of sleep results in increasing fatigue until the physical body has an opportunity to restore itself

D. Some authorities believe that the dream process of sleep aids the mind in integrating recent experiences into the memory

E. Various psychological changes occur when a person is deprived of sleep

F. Rest and sleep are more apt to occur under conditions of reduced stress

G. Patterns of rest vary with age, individual needs, and habits

IV. Factors which may interfere with rest and sleep

A. Pain and discomfort

1. Pain can interfere with every aspect of living such as working, playing, eating, thinking, and sleeping
2. Threshold of pain varies with individuals; some are better able to cope with pain
3. Pain can be aggravated by anxiety and other discomforts such as hunger, being too warm or too cold, uncomfortable dressings, or a wrinkled or wet sheet

INFORMATION SHEET

B. Stress and tension

1. Anxiety concerning illness, family, or loss of income

2. Fear of the unknown or unfamiliar such as impending tests or surgery

3. Unfamiliar surroundings

4. Unfamiliar or excessive noise

V. Effects of lack of sleep

A. Increasing fatigue

B. Difficulty in concentrating

C. Irritability

D. Anxiety

E. Feelings of persecution

F. Episodes of confusion and misperception

G. Suicidal tendencies

H. Complete disorientation

(NOTE: Some, all, or none of these symptoms may occur following loss of sleep. The severity of the symptoms is affected by the individual's age, severity of illness, sleep deprivation, monotony of environment, and duration of surgery.)

VI. Nursing measures which may promote rest and/or induce sleep

A. Encouraging patient to exercise during the day, gradually reducing activity in the evening

B. Gentle massage, such as back rub at bedtime

C. Providing a neat, restful environment, such as straightening the patient's room and bed linen

D. Change of position

E. Mid-evening snack or warm milk near bedtime

F. Explanation of impending tests or surgery

INFORMATION SHEET

G. Decreasing anxiety by listening to patient's problems and fears and by taking any action possible to alleviate these problems

H. Warm bath, if permitted

I. Establishing or following a regular bedtime routine

J. Elimination of noise in surroundings

K. Darkened room at bedtime

(NOTE: If night-time lighting is necessary, dim the lights and position them so they do not shine directly in the patient's face.)

L. Avoidance of unnecessary noise and light when checking patients during the night

M. Observation without disturbing patient when possible if patient's condition requires close observation

N. Waking patient for medication and treatment only when necessary

O. Providing for warmth by adding extra covering as needed

P. Use of drugs to promote sleep only when other measures are unsuccessful

VII. Observing and recording rest and sleep

(NOTE: Some of these notations are made on the patient's chart and some on the nursing care plan.)

A. Number and length of naps

B. Time patient goes to sleep and awakens

C. Number of times patient awakens during night

D. Aids to sleep

1. Back rub

2. Snack or warm drink

3. Medication

4. Bedtime routine

E. Environment preferences

1. Bed position

2. Number of pillows

INFORMATION SHEET

    3. Amount of covers

    4. Amount of light

F. Problems, anxieties, or complaints of the patient

REST AND SLEEP
UNIT XII

TEST

1. Match the terms on the right to the correct definition.

______a. Freedom from activity

______b. Periodic temporary cessation or interruption of the waking state

______c. One of a group of organic compounds derived from barbituric acid and commonly called sleeping pills

______d. Inability to fall asleep or remain asleep throughout the night

______e. Chemical compound used as a central nervous system stimulant

______f. Faulty or inadequate awareness

______g. Loss of recognition of time, place, and persons

______h. Disturbed perception in regard to time, place, or person

1. Amphetamine
2. Confusion
3. Rest
4. Disorientation
5. Barbiturate
6. Sleep
7. Misperception
8. Insomnia

2. Discuss the nature of sleep.

3. Discuss the value of rest and sleep.

4. Discuss factors which may interfere with rest and sleep.

5. List six effects of lack of sleep.

   a.

   b.

   c.

   d.

   e.

   f.

6. List ten nursing measures which can be used to promote rest and/or induce sleep.

   a.

   b.

   c.

   d.

   e.

f.

g.

h.

i.

j.

7. List four points to remember in observing and recording rest and sleep.

a.

b.

c.

d.

REST AND SLEEP
UNIT XII

ANSWERS TO TEST

1.

a.	3	e.	1
b.	6	f.	7
c.	5	g.	4
d.	8	h.	2

2. Discussion should include:

   a. Recognized as the most beneficial type of rest

   b. Does not imply inactivity; although it is an interruption of the waking state, the body is active and functioning during sleep

   c. Comprised of cycles varying in length from one to two hours

   d. Sleep cycles are made up of two parts

      1) NREM or nonrapid-eye-movement phase which comprises eighty percent of each cycle

      2) REM or rapid-eye-movement phase which comprises the remaining twenty percent

   e. The sleeper gradually moves in a cycle from NREM to REM sleep as many as five or six times per night

   f. Sleep experts agree that the purpose of NREM sleep is rest and restoration of the body; the purpose of REM sleep is believed to be related to the ability to withstand stress

   g. When a person is deprived of NREM sleep, he seems to tire more easily; when deprived of REM sleep, he becomes irritable and has difficulty in concentrating and coping with stress and may become disoriented

   h. REM sleep may be decreased by

      1) Alcoholic intake before bedtime

      2) Barbiturates

      3) Amphetamines

      4) Allowing only short periods of sleep

3. Discussion should include:

    a. Mental and physical rest is a physiological necessity

    b. Body cells require periods of decreased activity in order to restore themselves

    c. Lack of sleep results in increasing fatigue until the physical body has an opportunity to restore itself

    d. Some authorities believe that the dream process of sleep aids the mind in integrating recent experiences into the memory

    e. Various psychological changes occur when a person is deprived of sleep

    f. Rest and sleep are more apt to occur under conditions of reduced stress

    g. Patterns of rest vary with age, individual needs, and habits

4. Discussion should include:

    a. Pain and discomfort

        1) Pain can interfere with every aspect of living such as working, playing, eating, thinking, and sleeping

        2) Threshold of pain varies with individuals; some are better able to cope with pain

        3) Pain can be aggravated by anxiety and other discomforts such as hunger, being too warm or too cold, uncomfortable dressings, or a wrinkled or wet sheet

    b. Stress and tension

        1) Anxiety concerning illness, family, or loss of income

        2) Fear of the unknown or unfamiliar such as impending tests or surgery

        3) Unfamiliar surroundings

        4) Unfamiliar or excessive noise

5. Any six of the following

    a. Increasing fatigue

    b. Difficulty in concentrating

    c. Irritability

    d. Anxiety

  - e. Feelings of persecution
  - f. Episodes of confusion and misperception
  - g. Suicidal tendencies
  - h. Complete disorientation

6. Any ten of the following
  - a. Encouraging patient to exercise during the day, gradually reducing activity in the evening
  - b. Gentle massage, such as backrub at bedtime
  - c. Providing a neat, restful environment, such as straightening the patient's room and bed linen
  - d. Change of position
  - e. Mid-evening snack or warm milk near bedtime
  - f. Explanation of impending tests or surgery
  - g. Decreasing anxiety by listening to patient's problems and fears by taking any action possible to alleviate these problems
  - h. Warm bath, if permitted
  - i. Establishing or following a regular bedtime routine
  - j. Elimination of noise in surroundings
  - k. Darkened room at bedtime
  - l. Avoidance of unnecessary noise and light when checking patients during the night
  - m. Observation without disturbing patient when possible if patient's condition requires close observation
  - n. Waking patient for medication and treatment only when necessary
  - o. Providing for warmth by adding extra covering as needed
  - p. Use of drugs to promote sleep only when other measures are unsuccessful

7. Any four of the following
  - a. Number and length of naps
  - b. Time patient goes to sleep and awakens

c. Number of times patient awakens during the night

d. Aids to sleep

   1) Back rub

   2) Snack or warm drink

   3) Medication

   4) Bedtime routine

e. Environment preferences

   1) Bed position

   2) Number of pillows

   3) Amount of covers

   4) Amount of light

f. Problems, anxieties, or complaints of the patient

APPLICATION OF HEAT AND COLD
UNIT XIII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe types and effects of heat and cold applications. The student should be able to list precautions and discuss nursing responsibilities in applying heat or cold. The student should be able to demonstrate the ability to apply heat and cold in various forms. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with heat and cold to the correct definition.
2. Describe the local effects of heat.
3. List three systemic effects of heat.
4. List four factors pertaining to the application of heat.
5. List three precautions to prevent injury from excessive heat.
6. Describe six forms of dry heat.
7. List three types of moist heat.
8. Describe the local effects of cold applications.
9. Discuss the systemic effect of cold.
10. List three factors pertaining to the application of cold.
11. List three forms of dry cold.
12. List two forms of moist cold.
13. Discuss the responsibilities of the nurse in applying heat or cold.
14. Demonstrate the ability to:
    a. Use the warm water bottle.
    b. Use an electric heating pad.
    c. Administer a chemical hot pack.

d. Use a heat lamp.

e. Use a heat cradle.

f. Apply warm wet compresses.

g. Assist with sitz bath.

h. Administer steam inhalations.

i. Use an ice bag or ice collar.

j. Apply a chemical cold pack.

k. Apply cold moist packs.

l. Give a cool or tepid sponge bath.

APPLICATION OF HEAT AND COLD
UNIT XIII

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Demonstrate and discuss procedures outlined on the job sheets.

   F. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to perform procedures outlined on the job sheets.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Job sheets

      1. Job Sheet #1 Use the Warm Water Bottle

      2. Job Sheet #2 Use an Electric Heating Pad

      3. Job Sheet #3 Administer a Chemical Hot Pack

      4. Job Sheet #4 Use a Heat Lamp

5. Job Sheet #5--Use a Heat Cradle
6. Job Sheet #6--Apply Warm Wet Compresses
7. Job Sheet #7--Assist with Sitz Bath
8. Job Sheet #8--Administer Steam Inhalations
9. Job Sheet #9--Use an Ice Bag or Ice Collar
10. Job Sheet #10--Apply a Chemical Cold Pack
11. Job Sheet #11--Apply Cold Moist Packs
12. Job Sheet #12--Give a Cool or Tepid Sponge Bath

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C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. Wood, Lucile A. *Nursing Skills for Allied Health Services.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1972.

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APPLICATION OF HEAT AND COLD
UNIT XIII

INFORMATION SHEET

I. Terms and definitions

   A. Suppuration--Formation or discharge of pus

   B. Metabolic disease--One caused by a defect in the chemical processes of the cells of the body

   C. Necrosis--Death of a cell or group of cells

   D. Hypothermia treatment--Deliberate reduction of the temperature of all or part of the body

   E. Infrared rays--Rays which provide heat produced by the sun or with special equipment

   F. Ultraviolet rays--Invisible rays produced by the sun or with special equipment which cause tanning of the skin, kill bacteria, and aid in metabolism of vitamin D

   G. Compress--Cloth, wet or dry, folded and applied firmly to a part of the body

   H. Inhalation--Introduction of dry or moist air or vapor into the lungs for therapeutic purposes

   I. Systemic--Pertaining to the whole body rather than one of its parts

   J. Frostbite--Freezing or the effect of freezing of a part of the body

   K. Hyperemia--Excessive blood in a part due to a local or general relaxation of the arterioles

   L. Congestion--Abnormal accumulation of blood in a body part

   M. Etiology--All the causes of a disease or abnormal condition

II. Local effects of heat

   A. Dilatation of the blood vessels in the area

   B. Increased blood supply with

      1. More nutrients and oxygen available to the tissues

      2. Increased removal of toxins and excess tissue fluids

   C. Increase or decrease of swelling depending upon etiology and stage of disease or injury

   D. Reduction of pain

INFORMATION SHEET

   E. Decrease of inflammation

   F. Increased suppuration

III. Systemic effects of heat

   A. Diminished blood supply to other parts of the body which may result in weakness, dizziness, or fainting

   B. Drowsiness

   C. Sense of well-being due to relief of pain

IV. Factors pertaining to the application of heat

   A. Repeated applications increase tolerance to heat so patient may be burned without realizing it

   B. Excessive amounts of prolonged heat to body parts may cause hyperemia

   C. Some parts of the body, such as the eyelids, neck, and inner surface of the arms, are particularly sensitive to heat

   D. Infants, older people, people with fair skin, and those with decreased resistance are more susceptible to heat

   E. Impaired circulation and some metabolic diseases cause increased sensibility to heat

   Examples: Patients in shock; diabetics

V. Precautions to prevent injury from excessive heat

   A. Never place a warm water bag or other form of heat equipment against the skin of an unconscious patient or a patient in shock

   B. Never allow a patient to lie on a warm water bag or a heating pad

   C. When using heat in any form, frequently check the patient and the part to which heat is applied

   D. Heat is applied only when ordered by a physician

   E. Follow manufacturer's instructions and/or institutional policies concerning application of heat

INFORMATION SHEET

VI. Forms of dry heat

- A. Warm water bottle--Flat rubber bag with removable stopper or other type of closure
- B. Electric pad--Covered network of wires which radiate heat when an electrical current is passed through them
- C. Chemical hot pack--Prefilled plastic package containing interreacting ingredients which when combined by squeezing produce a sustained temperature
- D. Circulating water pad--Plastic pad through which warm water is circulated by an electric motor
- E. Heat lamp--One with regular light bulb to provide external heat
- F. Heat cradle--One equipped with light bulbs to provide heat
- G. Infrared and ultraviolet lamps--Ones with special bulbs to provide rays for specific treatments

  (NOTE: These lamps are usually used by therapy personnel who have had additional instruction in their use.)

VII. Types of moist heat

- A. Warm moist packs or compresses--Wool, flannel, or cotton cloth pieces from which hot water is wrung before applying to affected area
- B. Sitz bath--Used to apply heat to the pelvic area to cleanse a wound or relieve pain
- C. Steam inhalation--Water heated to provide warm moist air for the respiratory system

VIII. Local effects of cold applications

- A. Constrict blood vessels in the area
- B. Decrease blood supply to the part
- C. Prevent or decrease swelling
- D. Diminish bleeding
- E. Decrease suppuration
- F. Prolonged exposure reduces sensation and lessens pain
- G. Cool the part and eventually the body

INFORMATION SHEET

IX. Systemic effect of cold--Prolonged application of cold slows the metabolism; therefore, the body can be cooled therapeutically to decrease the stress of trauma and reduce blood loss

X. Factors pertaining to the application of cold

A. Prolonged application produces numbness and interruption of circulation and may cause pain

B. When skin appears white or spotty, cold applications should be discontinued

C. If application is prolonged, it can lead to frostbite of the deeper tissues and necrosis

XI. Forms of dry cold

A. Ice bag--Flat rubber bag filled with ice

B. Ice collar--Narrow rubber bag filled with ice and usually used around the neck

C. Hypothermia blanket or mattress--Plastic pad through which cold water flows continuously

D. Chemical cold pack--Prefilled plastic package containing interreacting ingredients which are combined by kneading to produce a long-lasting cold temperature

(NOTE: There are several forms of warm packs and cold packs available commercially. Some are used once and discarded; others are cleaned and used again. Their preparation and use may vary so the nurse should check instructions for using the equipment.)

XII. Forms of moist cold

A. Cold moist packs or compresses--Small pads of gauze, cotton covered with gauze, or a washcloth from which ice water is wrung before applying

B. Alcohol, cool, or tepid sponge bath--Sponge bath using alcohol, cool or tepid water, or a combination of alcohol and water

(CAUTION: Some patients may react unfavorably to cool baths; others may be unable to tolerate them. Cool baths should not be used for patients with arteriosclerosis, arthritis, or lowered resistance or for very young children. The initial effect of cold on the body may produce unfavorable reactions. If the patient has a weak, rapid pulse, cyanosis, or chills, the bath should be discontinued and moderate heat applied.)

C. Cool vapor inhalations--Water cooled to provide cool mist to the respiratory system

INFORMATION SHEET

XIII. Responsibilities of the nurse in applying heat or cold

- A. Applications of heat or cold are used only as ordered
- B. Observe safety precautions for each kind of treatment
- C. Maintain the correct temperature by
  - 1. Applying treatment properly
  - 2. Renewing as needed
- D. Check patient and area of treatment frequently for reaction
- E. Remove applications after prescribed length of time or when adverse reaction is noted
- F. Use pins cautiously
- G. Continuity of treatment is the responsibility of the nurse who begins treatment
- H. Applications of the incorrect temperature may do more harm than good
- I. Record and report treatment and observations

(NOTE: If treatment is to be continued, the nursing personnel who are to assume subsequent responsibility for care should be so informed.)

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #1--USE THE WARM WATER BOTTLE

I. Equipment needed

   A. Warm water bottle

   B. Cover for bottle

   C. Bath thermometer

   D. Graduate

II. Procedure

   A. Wash hands

   B. Fill graduate with water and test temperature, 110° - 115°F

   C. Fill warm water bottle about one-half or one-third full

   D. Expel air from warm water bottle

      1. Place water bottle on ledge of sink

      2. Hold neck of bottle upright until water reaches neck of bottle; secure top

   E. Check for leakage; place in cover

   F. Replace thermometer and graduate

   G. Take warm water bottle to patient's bedside

   H. Identify patient and explain procedure

   I. Provide privacy

   J. Place bottle on affected area

   K. Check patient and affected area frequently

   L. Refill bottle PRN

   M. At end of prescribed time or if adverse reaction occurs, remove warm water bottle

   N. Clean and return bottle and cover to designated area

   O. Wash hands

   P. Report and record treatment and effects

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #2-USE AN ELECTRIC HEATING PAD

I. Equipment needed

A. Electric heating pad

B. Cover

II. Procedure

A. Wash hands

B. Assemble equipment

C. Check pad by plugging it into an electric outlet

(CAUTION: Pad should begin to warm immediately. Do not use any pad with a frayed or worn cord. Observe safety rules when using any electrical equipment.)

D. Take covered pad to patient's bedside

E. Identify patient and explain procedure, stressing the necessary safety measures

F. Plug in the cord as close to the bed as possible; turn control button to low

G. Place the pad on the affected area; secure the pad in place

H. Return frequently

1. Check patient closely

2. Check the appliance to see that it is working properly

3. Check the patient's skin closely for increased or decreased redness, pain, or blood circulation

4. If adverse symptoms or reactions develop, discontinue treatment immediately and report to the person in charge

I. Remove heating pad when the treatment is completed

J. Provide for the patient's comfort

K. Return equipment to designated area

L. Wash hands

M. Report and record the treatment

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #3--ADMINISTER A CHEMICAL HOT PACK

The chemical hot pack comes in a variety of shapes and sizes. Selection depends upon site of treatment. The pack may be disposable. It is applied directly to the skin surface.

Procedure:

A. Wash hands

B. Obtain a chemical hot pack

C. Take pack to the bedside

D. Identify patient and explain the procedure

E. Mix the contents of the package according to the manufacturer's instructions

(CAUTION: If the package is punctured and the contents leak onto the skin, wash thoroughly and quickly to avoid irritation.)

F. Apply the pack to the designated area; if necessary, secure the pack by wrapping with a towel

G. Return frequently

  1. Check the patient's skin for an increase or decrease in redness, swelling, pain, and blood circulation

  2. The same general principles and safety precautions apply for using a chemical pack as for any other type of heat application

H. Replace pack as needed to provide heat for the prescribed length of time

I. Remove the pack when the treatment is completed

J. Provide for the patient's comfort; place communication device conveniently

K. Wash hands

L. Report and record treatment and observations

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #4--USE A HEAT LAMP

A variety of heat lamps are available and specific instructions should be given. If there are no instructions, consult with the person in charge before using the equipment.

Procedure:

- A. Wash hands
- B. Take the lamp to the bedside
- C. Identify patient and explain the procedure
- D. Provide for privacy
- E. Replace the top covers with a bath blanket or cover
- F. Position patient for comfort and expose the area to be treated
- G. Place the lamp three feet from the area to be treated
- H. Return frequently
    1. Check position of the lamp and patient
    2. Observe the patient's skin for signs of excessive heat and redness
    3. Check patient for adverse symptoms or complaints of too much heat
- I. Remove the heat lamp when the treatment is completed
- J. Replace covers and provide for patient's comfort; place communication device conveniently
- K. Wash hands
- L. Report and record treatment and observations

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #5-USE A HEAT CRADLE

The heat cradle is like the cradle used to keep the bedding off the patient's body with an electric cord and socket attached to provide heat. When being used, the cradle is covered by a sheet or the top bedding to keep the heat within the area. The size of the cradle permits circulation of air. A heat cradle is usually used on the lower trunk or legs to promote healing of wounds, to increase circulation, to provide warmth, or to dry a plaster cast.

Procedure:

A. Wash hands

B. Take the heat cradle to the bedside

C. Identify patient and explain the procedure

D. Provide for privacy

E. Replace the top covers with a bath blanket or cover

F. Position cradle over area to be treated

G. Plug in the cord as near the bed as possible; place cord where it will not be in the way

H. Cover the cradle with the top bedding; remove the bath blanket

(CAUTION: Be sure the patient and the covers are a safe distance from the light bulb.)

I. Provide cover as needed to avoid exposure

J. Return frequently; check for excessive heat or adverse reaction to treatment

K. Remove the cradle when the treatment is completed

L. Replace covers and provide for the patient's comfort; place communication device conveniently

M. Wash hands

N. Report and record treatment and observations

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #6–APPLY WARM WET COMPRESSES

I. Equipment needed

- A. Compress cloths
- B. Warm water bottles with covers or electric heating pad
- C. Bath towels
- D. Waterproof material
- E. Bath thermometer
- F. Tray
- G. Electric hot pack machine or basin of solution 125° to 130° F

II. Procedure

- A. Wash hands
- B. Assemble equipment and take to bedside

  (NOTE: Use electric hot pack machine according to instructions or basin of warm solution.)

- C. Identify patient and explain procedure

  (CAUTION: Sight of the warm pack may be frightening to the patient. Explain that the compresses are wrung very dry, lose heat quickly, and are applied gradually.)

- D. Provide privacy
- E. Wring compresses as dry as possible and apply gradually to affected area

  (NOTE: Tolerance to heat varies greatly with the individual and the area involved. Only the patient knows when an application is too hot.)

- F. Cover compresses with waterproof material and a towel or other dry material
- G. Use hot water bottle, electric heating pad, or chemical hot pack to keep compresses warm, as permitted
- H. Return frequently to observe patient and area being treated

JOB SHEET #6

I. Remove warm compresses and dry area gently

J. Provide for patient's comfort; place communication device conveniently

K. Care for supplies and equipment

L. Wash hands

M. Report and record treatment and observations

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #7–ASSIST WITH SITZ BATH

I. Equipment needed

   A. Portable sitz chair, disposable sitz bath, sitz tub, or bathtub

   B. Small blanket

   C. Bath towels

   D. Large pitcher

   E. Bath thermometer

II. Procedure

   A. Prepare bathroom and solution

      1. Prevent drafts by closing windows in room

      2. Fill sitz bath with water

      3. Check to see tha[illegible]ature of water is 105° to 110°F

      4. Place towel in tub[illegible]tient to sit on

   B. Identify patient and explain procedure

   C. Assist patient into sitz chair or tub

   (NOTE: If disposable sitz bath is used, seat patient on commode onto which sitz bath is placed

      1. Regulate flow of solution from suspended reservoir

      2. Replenish and refill reservoir as needed.)

   D. Place towel over thighs; if patient is chilly, drape bath blanket about him

   E. Continue treatment for specified time, usually 15 to 20 minutes

   F. Stay with patient during treatment

   (CAUTION: Observe patient closely; the effect of heat on a relatively large portion of the body may cause weakness or vertigo.)

JOB SHEET #7

G. Assist patient from sitz chair or tub

H. Dry and assist to dress and return to bed

I. Provide for patient's comfort; place communication device conveniently

J. Clean bath area

K. Wash hands

L. Report and record duration of treatment and observations

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #8--ADMINISTER STEAM INHALATIONS

I. Equipment needed

   A. Steam inhalator or vaporizer

   B. Distilled water

II. Procedure

   A. Wash hands

   B. Assemble equipment

   C. Fill chamber with distilled water and close reservoir; add medication if prescribed

   D. Take equipment to patient's room

   E. Identify patient and explain procedure

   F. Plug in cord and turn on switch

   G. Place steam inhalator near bed so that the nozzle is at least eighteen to twenty-four inches from patient to avoid burning

   H. Refill reservoir as necessary

   I. Wash hands

   J. Report and record the treatment and observations

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #9-USE AN ICE BAG OR ICE COLLAR

I. Equipment needed

- A. Ice bag or ice collar
- B. Cloth cover
- C. Ice scoop or spoon
- D. Basin
- E. Ice cubes or crushed ice
- F. Paper towel
- G. Bath towel

II. Procedure

- A. Wash hands
- B. Assemble equipment
  - 1. Fill basin with ice
  - 2. Fill ice cap half full
  - 3. Expel air by resting ice cap or collar on table in horizontal position
  - 4. Close top
  - 5. Wipe with paper towel and check for leakage
  - 6. Cover

    (CAUTION: Cover must be used to prevent frostbite.)
- C. Take equipment to bedside
- D. Identify patient and explain procedure
- E. Place ice bag on designated area
- F. Return frequently to check patient and affected area

  (CAUTION: Note any blanching or spotting of the skin which indicates interference with circulation.)

JOB SHEET #9

G. Refill ice bag as necessary

H. Remove ice bag when treatment is finished; clean and return equipment to storage

I. Provide for patient's comfort; position communication device conveniently

J. Wash hands

K. Report and record treatment and observations

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #10–APPLY A CHEMICAL COLD PACK

The chemical cold pack is manufactured in several sizes and shapes. When the ingredients are mixed according to the manufacturer's instructions, they produce a sustained, controlled temperature lasting from thirty minutes to four hours. The temperature range is from 50° to 80°F. Because of the controlled temperature of the packs, it is nearly impossible to cause a freeze burn on the patient. Since there are so many different kinds of cold packs made, it is absolutely essential to read the directions for the specific product being used.

Procedure:

A. Wash hands

B. Obtain a chemical cold pack and take to bedside

C. Identify patient and explain the procedure

D. Mix the contents of the package according to the manufacturer's instructions

E. Apply the pack to the designated area, wrapping as necessary with a towel to keep the pack in place

F. Return frequently to observe patient and affected area

G. Replace pack as needed

H. Remove the pack when the treatment is completed

I. Provide for the patient's comfort; position communication device conveniently

J. Wash hands

K. Report and record the treatment and observations

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #11–APPLY COLD MOIST PACKS

I. Equipment needed

   A. Basin containing cracked ice and water

   B. Compresses

   C. Small waterproof sheet

II. Procedure

   A. Wash hands

   B. Assemble equipment and take to bedside

   C. Identify patient and explain procedure

   D. Provide privacy

   E. If necessary, remove top covers and replace them with a bath blanket or cover

   F. Place waterproof sheet under part to be treated

   G. Wring the compress to prevent dripping; apply to affected part

   H. Change the compress frequently

   I. Continue treatment for prescribed time

   (NOTE: If the patient is able to change his own compresses, explain the procedure and allow the patient to continue.)

   J. Return frequently to observe patient and affected area

   K. Remove the compresses at the end of the prescribed time

   L. Dry the affected part gently

   M. Provide for the patient's comfort; position communication device

   N. Clean the equipment and return to storage

   O. Wash hands

   P. Record and report the treatment and observations

APPLICATION OF HEAT AND COLD
UNIT XIII

JOB SHEET #12–GIVE A COOL OR TEPID SPONGE BATH

I. Equipment needed

   A. Three washcloths

   B. Three bath towels

   C. Waterproof pillowcase

   D. Ice bag with cover

   E. Warm water bottle (115°F) with cover

   F. Bath thermometer

   G. Bath blanket or cover

   H. Small basin with ice

   I. Basin one-third to one-half full of solution at proper temperature

   J. Pencil and paper

   K. Thermometer with container

II. Procedure

   A. Wash hands

   B. Prepare equipment; fill basin with water

      1. For tepid sponge bath, water temperature should be kept at 90° to 105°F

      2. For cold sponge bath, water temperature is to be from 65° to 90°F

      3. For alcohol sponge bath, mix 70% alcohol with equal parts of water

   C. Take equipment to bedside

   D. Identify patient and explain procedure

   E. Offer bedpan or urinal

   F. Remove gown and top bedding; replace with bath blanket or cover

   G. Put waterproof case on pillow; cover with pillowcase

JOB SHEET #12

H. Place ice bag on head and warm water bottle at feet

I. Take and record temperature, pulse, and respirations

J. Place a cool, moist towel over the abdomen and cool, moist washcloths in axillae and groin

K. Sponge each arm for approximately five minutes; pat dry

L. Sponge chest for five minutes; pat dry

(NOTE: Do not sponge abdomen.)

M. Sponge each leg for five minutes; pat dry

N. Turn patient on side

O. Sponge entire length of back for five minutes; pat dry

(CAUTION: Do not sponge longer than thirty minutes.)

P. Put on gown or pajamas

Q. Remove ice cap and warm water bottle

R. Change linen as needed

S. Replace top covers

T. Provide for patient's comfort; position communication device

U. Clean and replace equipment

V. Wash hands

W. Take temperature, pulse, and respirations every thirty minutes after sponge bath is completed

X. Report and record treatment and observations

(NOTE: A nursing measure which is similar to the cooling sponge is the use of a wet sheet and fan to increase heat elimination from the body. The patient is covered with only a wet sheet with a fan so directed as to create a constant flow of air over the sheet. This procedure promotes evaporation and convection of heat. During the treatment the patient and his vital signs should be watched closely.)

APPLICATION OF HEAT AND COLD
UNIT XIII

TEST

1. Match the term on the right to the correct definition.

_____a. Death of a cell or group of cells

_____b. Pertaining to the whole body rather than one of its parts

_____c. Rays which provide heat produced by the sun or with special equipment

_____d. Cloth, wet or dry, folded and applied firmly to a part of the body

_____e. Introduction of dry or moist air or vapor into the lungs for therapeutic purposes

_____f. Abnormal accumulation of blood in a body part

_____g. One caused by a defect in the chemical processes of the cells of the body

_____h. Invisible rays produced by the sun or with special equipment which cause tanning of the skin, kill bacteria, and aid in metabolism of vitamin D

_____i. Freezing or the effect of freezing of a part of the body

_____j. Deliberate reduction of the temperature of all or part of the body

_____k. Formation or discharge of pus

_____l. All the causes of a disease or abnormal condition

_____m. Excessive blood in a part due to a local or general relaxation of the arterioles

1. Suppuration
2. Metabolic disease
3. Necrosis
4. Hypothermia treatment
5. Infrared rays
6. Ultraviolet rays
7. Compress
8. Hyperemia
9. Inhalation
10. Systemic
11. Frostbite
12. Etiology
13. Congestion

2. Describe the local effects of heat.

3. List three systemic effects of heat.

   a.

   b.

   c.

4. List four factors pertaining to the application of heat.

   a.

   b.

   c.

   d.

5. List three precautions to prevent injury from excessive heat.

   a.

   b.

   c.

6. Describe six forms of dry heat.

   a.

   b.

   c.

   d.

   e.

   f.

7. List three types of moist heat.

   a.

   b.

   c.

8. Describe the local effects of cold applications.

9. Discuss the systemic effect of cold.

10. List three factors pertaining to the application of cold.

    a.

    b.

    c.

11. List three forms of dry cold.

    a.

    b.

    c.

12. List two forms of moist cold.

    a.

    b.

13. Discuss the responsibilities of the nurse in applying heat or cold.

14. Demonstrate the ability to:

    a. Use the warm water bottle.

    b. Use an electric heating pad.

    c. Administer a chemical hot pack.

    d. Use a heat lamp.

    e. Use a heat cradle.

    f. Apply warm wet compresses.

    g. Assist with sitz bath.

    h. Administer steam inhalations.

    i. Use an ice bag or ice collar.

    j. Apply a chemical cold pack.

    k. Apply cold moist packs.

    l. Give a cool or tepid sponge bath.

(NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

APPLICATION OF HEAT AND COLD
UNIT XIII

ANSWERS TO TEST

1. a. 3
   b. 10
   c. 5
   d. 7
   e. 9
   f. 13
   g. 2
   h. 6
   i. 11
   j. 4
   k. 1
   l. 12
   m. 8

2. Description should include:

   a. Dilatation of the blood vessels in the area

   b. Increased blood supply with

      1) More nutrients and oxygen available to the tissues

      2) Increased removal of toxins and excess tissue fluids

   c. Increase or decrease of swelling depending upon etiology and stage of disease or injury

   d. Reduction of pain

   e. Decrease of inflammation

   f. Increased suppuration

3. a. Diminished blood supply to other parts of the body which may result in weakness, dizziness, or fainting

   b. Drowsiness

   c. Sense of well-being due to relief of pain

4. Any four of the following

   a. Repeated applications increase tolerance to heat so patient may be burned without realizing it

   b. Excessive amounts of prolonged heat to body parts may cause hyperemia

   c. Some parts of the body, such as the eyelids, neck, and inner surface of the arms, are particularly sensitive to heat

   d. Infants, older people, people with fair skin, and those with decreased resistance are more susceptible to heat

e. Impaired circulation and some metabolic diseases cause increased sensitivity to heat

5. Any three of the following

a. Never place a warm water bag or other form of heat equipment against the skin of an unconscious patient or a patient in shock

b. Never allow a patient to lie on a warm water bag or a heating pad

c. When using heat in any form, frequently check the patient and the part to which heat is applied

h. Heat is applied only when ordered by a physician

e. Follow manufacturer's instructions and/or institutional policies concerning application of heat

6. Any six of the following

a. Warm water bottle–Flat rubber bag with removable stopper or other type of closure

b. Electric pad–Covered network of wires which radiate heat when an electrical current is passed through them

c. Chemical hot pack–Prefilled plastic package containing interreacting ingredients which when combined by squeezing produce a sustained temperature

d. Circulating water pad–Plastic pad through which warm water is circulated by an electric motor

e. Heat lamp–One with a regular light bulb to provide external heat

f. Heat cradle–One equipped with light bulbs to provide heat

g. Infrared and ultraviolet lamps–Ones with special bulbs to provide rays for specific treatments

7. a. Warm moist packs or compresses

b. Sitz bath

c. Steam inhalation

8. Description should include:

a. Constrict blood vessels in the area

b. Decrease blood supply to the part

c. Prevent or decrease swelling

d. Diminish bleeding

e. Decrease suppuration

f. Prolonged exposure reduces sensation and lessens pain

g. Cool the part and eventually the body

9. Prolonged applicaton of cold slows down the metabolism, therefore, the body can be cooled therapeutically to decrease the stress of trauma and reduce blood loss

10. a. Prolonged application produces numbness and interruption of circulation and may cause pain

b. When skin appears white or spotty, cold applications should be discontinued

c. If application is prolonged, it can lead to frostbite of the deeper tissues and necrosis

11. Any three of the following

a. Ice bag

b. Ice collar

c. Hypothermia blanket or mattress

d. Chemical cold pack

12. Any two of the following

a. Cold moist packs or compresses

b. Alcohol, cool, or tepid sponge bath

c. Cool vapor inhalations

13. Discussion should include:

a. Applications of heat or cold are used only as ordered

b. Observe safety precautions for each kind of treatment

c. Maintain the correct temperature by

1) Applying treatment properly

2) Renewing as needed

d. Check patient and area of treatment frequently for reaction

e. Remove applications after prescribed length of time or when adverse reaction is noted

f. Use time cautiously

g. Continuity of treatment is the responsibility of the nurse who begins treatment

h. Applications of the incorrect temperature may do more harm than good

i. Record and report treatment and observations

13. Performance skills will be evaluated to the satisfaction of the instructor.

ADMISSION, EXAMINATION, TRANSFER, DISCHARGE
UNIT XIV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss admission, transfer, and discharge procedures. The student should be able to list ways to help patients during admission, observations to be made, and records which must be made. The student should be able to demonstrate admission, transfer, and discharge of a patient and assistance with a physical examination. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definition.
2. Discuss the patient's feelings concerning hospitalization.
3. Describe the nurse's role in admitting a patient.
4. List five ways to help the patient during admission.
5. List five observations to be made during admission.
6. List the records which are the responsibility of the admitting nurse.
7. Discuss the responsibilities of the nurse in assisting the physician with a physical examination.
8. Discuss the transfer of the patient within the hospital.
9. Describe the nursing responsibilities in discharging a patient.
10. Demonstrate the ability to:
    a. Admit a patient.
    b. Transfer a patient.
    c. Discharge a patient.
    d. Assist with a physical examination.

ADMISSION, EXAMINATION, TRANSFER, DISCHARGE
UNIT XIV

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Demonstrate and discuss procedures outlined on the job sheets.

   F. Provide charting examples for job sheets.

   G. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to perform the procedures outlined on the job sheets.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Job sheets

      1. Job Sheet #1 Admit a Patient

      2. Job Sheet #2 Transfer a Patient

   3. Job Sheet #3--Discharge a Patient
   4. Job Sheet #4--Assist with a Physical Examination

D. Test

E. Answers to test

II. References:

A. *Nursing Procedures for the Practical Nurse.* Columbus, Ohio: Ohio Trade and Industrial Education Service.

B. Rapier, Dorothy K., et al. *Practical Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1970.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. Wood, Lucile A. *Nursing Skills for Allied Health Services.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1972.

III. Additional materials:

A. Book--Young, Helen et al. *The Lippincott Manual of Nursing Practice.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

B. Filmstrips

   1. "Admission and Discharge." Trainex Corporation.
   2. "Assisting With a Physical Examination." Trainex Corporation.
   3. "Physical Diagnosis." J. B. Lippincott Company.
   4. "Part I: Psychosocial Adaptation to Illness." *The Patient As A Person* (Series). Train-Aide.
   5. *Nurse-Patient Interaction* (Series). Concept Media.
      a. "Program I: The Hospitalized Person."
      b. "Program II: The Nurse."

ADMISSION, EXAMINATION, TRANSFER, DISCHARGE
UNIT XIV

INFORMATION SHEET

I. Terms and definitions

   A. Urinalysis--Analysis of the urine to aid in the diagnosis of a disease

   B. Kardex--Visible card file in which the nursing care plans are usually kept

   C. Prosthesis--Artificial replacement or enhancement of a body part

   D. Vermin--Parasitic insects such as lice

   E. Percussion--Tapping the body lightly but sharply to determine condition, position, size, or consistency of an underlying structure

   F. Percussion hammer--One with a rubber head used in tapping parts of the body

   G. Ophthalmoscope--Instrument for examining the interior of the eye

   H. Otoscope--Instrument used to examine the ear

   I. Speculum--Instrument for opening a body orifice to permit visual examination

   J. Diagnosis--Recognition of disease states from symptoms, examinations, and results of tests performed

   K. Prognosis--Prediction of the course and end of a disease

   L. Inspection--Visual examination of the body

   M. Auscultation--Listening for sounds produced in the body

   N. Palpation--Examining the body by feeling with the hands

   O. Manipulation--Any treatment or procedure involving use of the hands

   P. Observation--Recognizing and noting a symptom or complaint

   Q. Lubricant--Agent that makes an object slippery

II. Patient's feelings concerning hospitalization

   A. Although hospitalization for medical and nursing care is now common practice in this country, patients still feel anxious and apprehensive

INFORMATION SHEET

B. People react differently to stress

1. Some may be withdrawn and quiet, accepting what is done without comment

2. Some may talk constantly and be seemingly unaware of their surroundings or instructions given to them

3. Some may call repeatedly for assistance when they really need reassurance

C. Patients fear loss of identity and privacy

D. Patients may fear the treatment or surgery because they do not understand what is going to happen to them

E. Many patients fear the loss of their independence believing they will be a nuisance and a burden

F. Many patients are concerned with the expense of hospitalization and loss of income while unable to work

G. Whatever is troubling a patient affects his reaction to illness

III. Nurse's role in admitting a patient

A. First impressions are lasting

B. Nurse-patient relationships begin at the time of admission

C. Show concern for the patient by calling him by his name and telling him your name

D. Explain what is being done and why it is necessary

E. Be courteous with the patient and his family; treat them as welcome guests, helping them to feel comfortable

IV. Ways to help the patient during admission

A. When notified that a patient is being admitted, open the bed to receive the patient; give the unit a final check for necessary equipment

B. Use the patient's correct name when speaking to him or about him; do not call patient by his first name or nickname such as Grampa unless patient requests it

C. Orient the patient and explain the use of hospital equipment

INFORMATION SHEET

D. Provide for privacy

E. Assist as necessary in a matter-of-fact way; it will help the patient to accept the situation more easily if you are calm and poised

F. Answer the patient's questions carefully or refer him to the appropriate person

G. Be careful with patient's belongings

(NOTE: Each institution has its own policies regarding the care of patient's clothing and valuables. In most cases patients are requested not to keep valuable articles at the bedside.)

H. Explain the hospital routine telling him the times meals are served, visiting regulations, and about special services such as use of the television and telephone, volunteer services, and duties of various personnel

V. Observations during admission

A. General appearance and behavior

B. Assistance required

C. Symptoms expressed by the patient

D. Height and weight

E. Vital signs

VI. Records

A. Labels

1. Name on bed or unit
2. Identification bracelet
3. Chart

B. Requisitions

1. Urinalysis
2. Routine blood tests
3. Other laboratory tests or X rays as ordered
4. Diet

INFORMATION SHEET

C. Nursing care plan in the Kardex

D. Chart

1. Name on each sheet
2. TPR graph
3. Admission notation on Nurses' Notes including
    a. General description and age
    b. Attending physician
    c. Chief complaint or reason for admission
    d. Allergies and/or other known disorders such as diabetes or epilepsy
    e. Mode of admission
    f. Degree of ambulation
    g. Vital signs
    h. Height and weight
    i. Urine specimen obtained
    j. Name of physician and time he was notified of patient's admission
    k. Dentures, eyeglasses, contact lenses, hearing aid, or other prosthesis
    l. Disposition of clothing and valuables

VII. Responsibilities of the nurse assisting with a physical examination

A. Explain the procedure to the patient

B. Assemble equipment

C. Provide for privacy

D. Position and drape patient

E. Assist patient and physician as required

F. After examination is finished, provide for patient's comfort

INFORMATION SHEET

G. Clean equipment and return to designated area

H. Chart procedure on Nurses' Notes

VIII. Transfer of patient within the hospital

A. Notify other departments, such as information, admitting and business offices and dietary department according to institutional procedure

B. Personal belongings should be accounted for and moved with the patient

C. Notation of transfer is made on the Nurses' Notes

D. Chart, nursing care plan, and medications accompany the patient

E. Escort patient to the new unit by stretcher, wheelchair, or walking with patient; introduce him to the person in charge

F. On return to patient's unit check again for anything he may have left

G. Clean the unit or make arrangements for this to be done

IX. Nursing responsibilities in discharging a patient

A. Observe discharge order

1. Note time and mode of discharge

2. If the patient leaves against medical advice, a signed release form freeing the hospital from responsibility for the patient is required

B. Business office, pharmacy, dietary, and other departments are notified according to the policies of the institution

C. Clothing and valuables stored outside the patient's unit are obtained for him

(NOTE: In most institutions the patient or his representative is required to sign a receipt for clothing and valuables.)

D. Medications, prescriptions, and/or instructions concerning diet or treatment are provided according to institutional policy

E. Patient is escorted to the exit at the designated time

F. Patient's chart is closed

1. Record is made on Nurses' Notes of time of discharge and method by which the patient left as by ambulation, wheelchair, or stretcher

2. Complete record is sent to the medical record room

G. Patient unit is cleaned and remade

ADMISSION, EXAMINATION, TRANSFER, DISCHARGE
UNIT XIV

JOB SHEET #1--ADMIT A PATIENT

I. Equipment needed
   - A. Notepaper and pen
   - B. Patient's chart
   - C. Stethoscope
   - D. Sphygmomanometer
   - E. Clinical thermometer
   - F. Specimen container and label
   - G. Scales

II. Procedure
   - A. Prepare the unit
     - 1. Check for completeness of bedside equipment
     - 2. Adjust lighting
     - 3. Fanfold top covers
     - 4. Obtain patient's gown
   - B. Greet patient; introduce yourself
   - C. Orient patient to his surroundings; introduce him to others as appropriate
   - D. Ask family to wait in lounge or hall until patient is prepared for bed
   - E. Provide privacy
   - F. Assist patient as necessary to undress and get into bed
   - G. Ask patient if he has any valuables which have not been checked in
   - H. Obtain urine specimen
   - I. Take vital signs
   - J. Weigh patient and measure height if possible

JOB SHEET #1

K. While assisting patient, observe the following
  1. Physical condition
  2. Mental state
  3. Degree of ambulation
  4. Rashes, cuts, bruises, or abrasions
  5. Presence of vermin
  6. Any other symptoms

L. Make patient comfortable; position communication device conveniently

M. Provide drinking water if permitted

N. Allow family to return to room

O. Prepare chart
  1. Put name of patient and physician and room number on chart holder
  2. Write necessary information on page headings
  3. Fill in necessary admission records and forms
  4. Record observations including
     a. Opening statement giving patient's age, brief description of physical condition, and reason for admission
     b. Vital signs
     c. Weight and height
     d. Patient's physical and mental condition
     e. Allergies and other known disorders

ADMISSION, EXAMINATION, TRANSFER, DISCHARGE
UNIT XIV

JOB SHEET #2–TRANSFER A PATIENT

Procedure:

A. Wash hands

B. Identify patient and explain procedure

C. Assemble the patient's belongings including

  1. All of his clothes and personal items

     (NOTE: Check bedside table and clothes closet.)

  2. Dentures, eyeglasses, hearing aid if any

  3. His hospital equipment; bedpan, emesis basin, wash basin, and other items in his bedside table

D. Move the patient and his belongings to the new location

   (NOTE: The patient is transferred to another unit by wheelchair, stretcher, or in the bed.)

E. Assist the patient into bed

F. Provide for his comfort; position communication device conveniently

G. Provide drinking water as permitted

H. Store patient's supplies and clothing

I. Introduce him to others as appropriate

J. Wash hands

K. Report and record transfer

  1. Note time and mode of transfer

  2. Chart any unusual occurrences

L. Give chart, nursing care plan, and medications to charge nurse

M. Give oral report on patient's condition

N. Return wheelchair or stretcher to proper place

O. Strip former room of used linens and make necessary arrangements for terminal cleaning of unit

ADMISSION, EXAMINATION, TRANSFER, DISCHARGE
UNIT XIV

JOB SHEET #3 DISCHARGE A PATIENT

Procedure:

A. Obtain discharge order

B. Determine the expected time of discharge

C. If valuables have been stored, obtain them, have the patient sign for them, and return receipt to proper place

D. Check for prescribed instructions for the patient

E. Wash hands

F. Check dressings or bandages to see if they are to be changed before release

G. Check to see if the business office procedure has been completed

H. Assist patient to dress and pack his belongings

I. Obtain a wheelchair and take the patient to the discharge area

J. Assist the patient into the car; give him his belongings

K. Return wheelchair to storage area

L. Arrange for terminal cleaning of the unit

M. Wash hands

N. Report and record

  1. Report the time the patient left to the person in charge

  2. Chart the discharge including the time and mode of discharge, a statement about the patient's general condition, destination (home or another facility), and any other pertinent comments; sign your name and title

O. Remove chart from chart holder and place in designated area

ADMISSION, EXAMINATION, TRANSFER, DISCHARGE
UNIT XIV

JOB SHEET #4--ASSIST WITH A PHYSICAL EXAMINATION

I. Equipment needed

- A. Tongue depressor
- B. Flashlight
- C. Stethoscope
- D. Sphygmomanometer
- E. Percussion hammer
- F. Ophthalmoscope
- G. Otoscope
- H. Examination gloves
- I. Lubricant
- J. Appropriate speculum
- K. Tissues
- L. Bath blanket
- M. Emesis basin
- N. Paper towels

II. Procedure

- A. Wash hands
- B. Assemble equipment
- C. Identify patient and explain procedure
- D. Provide privacy
- E. Offer bedpan or urinal
- F. Wash hands
- G. Arrange proper lighting

JOB SHEET #4

H. Adjust bed to desired position

I. Replace top covers with bath blanket or cover

J. Unfasten patient's gown

K. Assist physician as needed

L. Position patient and drape appropriately

   1. Sims' position for rectal examination--Arrange bath blanket so buttocks can be exposed, keeping the rest of the patient covered

   2. Dorsal recumbent position for genital examination--Place bath blanket crosswise over patient; wrap one lower corner around each foot, lifting center of lower edge to expose genital area

   3. Prone position for examination of back and/or spine--Cover lower extremities with the bath blanket

   4. Knee-chest position for rectal and/or vaginal examination--Place bath blanket crosswise over patient; wrap one lower corner about each leg, exposing genital area

   5. Dorsal lithotomy position for examination of the rectum, urinary bladder, vagina, cervix, and/or perineum--Drape as for dorsal recumbent position

   (NOTE: If patient is being examined where there are no leg holders to maintain the position, it may be necessary to have one person to support each leg during the examination.)

M. Assist physician with gloves if rectal or vaginal examination is to be done; drop lubricant onto finger when needed without touching glove

N. Place paper towel or waste basket in area convenient to receive soiled gloves

O. When examination is completed, cleanse patient as needed; replace bath blanket with top covers

P. Provide for patient's comfort; place communication device conveniently

Q. Remove equipment and care for it properly

   1. Wash equipment which can be washed

   2. Wipe stethoscope ear pieces with alcohol

   3. Return all equipment to designated area

JOB SHEET #4

R. Wash hands

S. Report and record procedure

ADMISSION, EXAMINATION, TRANSFER, DISCHARGE
UNIT XIV

TEST

1. Match the terms on the right to the correct definition.

______a. Examining the body by feeling with the hands

______b. Prediction of the course and end of a disease

______c. Visual examination of the body

______d. Visible card file in which the nursing care plans are usually kept

______e. Any treatment or procedure involving use of the hands

______f. Instrument for examining the interior of the eye

______g. Recognizing and noting a symptom or complaint

______h. Analysis of the urine to aid in the diagnosis of a disease

______i. Instrument used to examine the ear

______j. Artificial replacement or enhancement of a body part

______k. Parasitic insects such as lice

______l. Recognition of disease states from symptoms, examinations, and results of tests performed

______m. One with a rubber head used in tapping parts of the body

1. Urinalysis
2. Ophthalmoscope
3. Diagnosis
4. Palpation
5. Lubricant
6. Prosthesis
7. Inspection
8. Percussion
9. Observation
10. Manipulation
11. Auscultation
12. Prognosis
13. Speculum
14. Otoscope
15. Vermin
16. Kardex
17. Percussion hammer

______n. Instrument for opening a body orifice to permit visual examination

______o. Agent that makes an object slippery

______p. Listening for sounds produced in the body

______q. Tapping the body lightly but sharply to determine condition, position, size, or consistency of an underlying structure

2. Discuss the patient's feelings concerning hospitalization.

3. Describe the nurse's role in admitting a patient.

4. List five ways to help the patient during admission.

   a.

   b.

   c.

   d.

   e.

5. List five observations to be made during admission.

   a.

   b.

   c.

   d.

   e.

6. List the records which are the responsibility of the admitting nurse.

7. Discuss the responsibilites of the nurse in assisting the physician with a physical examination.

8. Discuss the transfer of the patient within the hospital.

9. Describe the nursing responsibilities in discharging a patient.

10. Demonstrate the ability to:

    a. Admit a patient.

    b. Transfer a patient.

    c. Discharge a patient.

    d. Assist with a physical examination.

    (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

ADMISSION, EXAMINATION, TRANSFER, DISCHARGE
UNIT XIV

ANSWERS TO TEST

1.
a. 4
b. 12
c. 7
d. 16
e. 10
f. 2
g. 9
h. 1
i. 14
j. 6
k. 15
l. 3
m. 17
n. 13
o. 5
p. 11
q. 8

2. Discussion should include:

   a. Although hospitalization for medical and nursing care is now common practice in this country, patients still feel anxious and apprehensive

   b. People react differently to stress

      1) Some may be withdrawn and quiet, accepting what is done without comment

      2) Some may talk constantly and be seemingly unaware of their surroundings or instructions given to them

      3) Some may call repeatedly for assistance when they really need reassurance

   c. Patients fear loss of identity and privacy

   d. Patients may fear the treatment or surgery because they do not understand what is going to happen to them

   e. Many patients fear the loss of their independence believing they will be a nuisance and a burden

   f. Many patients are concerned with the expense of hospitalization and loss of income while unable to work

   g. Whatever is troubling a patient affects his reaction to illness.

3. Description should include:
   - a. First impressions are lasting
   - b. Nurse-patient relationships begin at the time of admission
   - c. Show concern for the patient by calling him by his name and telling him your name
   - d. Explain what is being done and why it is necessary
   - e. Be courteous with the patient and his family; treat them as welcome guests, helping them to feel comfortable

4. Any five of the following
   - a. When notified that a patient is being admitted, open the bed to receive the patient; give the unit a final check for necessary equipment
   - b. Use the patient's correct name when speaking to him or about him; do not call patient by his first name or nickname such as Grandpa unless patient requests it
   - c. Orient the patient and explain the use of hospital equipment
   - d. Provide for privacy
   - e. Assist as necessary in a matter-of-fact way; it will help the patient to accept the situation more easily if you are calm and poised
   - f. Answer the patient's questions carefully or refer him to the appropriate person
   - g. Be careful with patient's belongings
   - h. Explain the hospital routine telling him the times meals are served, visiting regulations, and about special services such as use of the television and telephone, volunteer services, and duties of the various personnel

5. a. General appearance and behavior
   - b. Assistance required
   - c. Symptoms expressed by the patient
   - d. Height and weight
   - e. Vital signs

6. a. Labels
    1) Name on bed or unit
    2) Identification bracelet
    3) Chart
  b. Requisitions
    1) Urinalysis
    2) Routine blood tests
    3) Other laboratory tests or X rays as ordered
    4) Diet
  c. Nursing care plan in the Kardex
  d. Chart
    1) Name on each sheet
    2) TPR graph
    3) Admission notation on Nurses' Notes including
      a) General description and age
      b) Attending physician
      c) Chief complaint or reason for admission
      d) Allergies and/or other known disorders such as diabetes or epilepsy
      e) Mode of admission
      f) Degree of ambulation
      g) Vital signs
      h) Height and weight
      i) Urine specimen obtained
      j) Name of physician and time he was notified of patient's admission

k) Dentures, eyeglasses, contact lenses, hearing aid, or other prosthesis

l) Disposition of clothing and valuables

7. Discussion should include:

   a. Explain the procedure to the patient
   b. Assemble equipment
   c. Provide for privacy
   d. Position and drape patient
   e. Assist patient and physician as required
   f. After examination is finished, provide for patient's comfort
   g. Clean equipment and return to designated area
   h. Chart procedure on Nurses' Notes

8. Discussion should include:

   a. Notify other departments such as information, admitting, and business offices and dietary department according to institutional procedure
   b. Personal belongings should be accounted for and moved with the patient
   c. Notation of transfer is made on the Nurses' Notes
   d. Chart, nursing care plan and medications accompany the patient
   e. Escort patient to the new unit by stretcher, wheelchair, or walking with the patient; introduce him to person in charge
   f. On return to patient's unit check again for anything he may have left
   g. Clean the unit or make arrangements for this to be done

9. Description should include:

   a. Observe discharge order
      1) Note time and mode of discharge
      2) If the patient leaves against medical advice, a signed release form freeing the hospital from responsibility for the patient is required

b. Business office, pharmacy, dietary, and other departments are notified according to the policies of the institution

c. Clothing and valuables stored outside the patient's unit are obtained for him

d. Medications, prescriptions, and/or instructions concerning diet or treatment are provided according to institutional policy

e. Patient is escorted to the exit at the designated time

f. Patient's chart is closed

    1) Record is made on Nurses' Notes of time of discharge and method by which the patient left as by ambulation, wheelchair, or stretcher

    2) Complete record is sent to the medical record room

G. Patient unit is cleaned and remade

10. Performance skills will be evaluated to the satisfaction of the instructor.

COLLECTING SPECIMENS
UNIT XV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss specimen collecting techniques and demonstrate the ability to obtain specimens. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with collecting specimens to the correct definition.
2. Discuss guidelines for collecting specimens.
3. Discuss the five types of urine specimens and their collection.
4. Discuss the purposes of the five types of urine specimens.
5. Discuss the collecting of feces or stool specimens.
6. Describe the collecting of sputum specimens.
7. Discuss gastric specimens.
8. Demonstrate the ability to:
    a. Collect a urine specimen.
    b. Obtain a clean catch urine specimen.
    c. Collect a twenty-four hour specimen.
    d. Collect a feces or stool specimen.
    e. Collect a sputum specimen.

COLLECTING SPECIMENS
UNIT XV

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and job sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information and job sheets.

  E. Demonstrate procedures outlined in the job sheets.

  F. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Demonstrate the ability to perform the procedures outlined in the job sheets.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Job sheets

    1. Job Sheet #1--Collect a Urine Specimen

    2. Job Sheet #2--Obtain a Clean Catch Urine Specimen

    3. Job Sheet #3--Collect a Twenty-four Hour Specimen

4. Job Sheet #4--Collect a Feces or Stool Specimen

5. Job Sheet #5--Collect a Sputum Specimen

D. Test

E. Answers to test

II. References:

A. *Nursing Procedures for the Practical Nurse.* Columbus, Ohio: Ohio Trade and Industrial Education Service.

B. Rapier, Dorothy K., et al. *Practical Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1970.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. Wood, Lucile A. *Nursing Skills for Allied Health Services.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1972.

III. Additional materials:

A. Film--"Clean, Voided Urine--Its Collection and Culture." Eaton Laboratories, Division of Morton-Norwich Products, Inc., Norwich, New Jersey 13815.

B. Filmstrips

1. "Urinary Care." Trainex Corporation.

2. "Urinary Elimination." J. B. Lippincott Company.

COLLECTING SPECIMENS
UNIT XV

INFORMATION SHEET

I. Terms and definitions

   A. Catheter--Tubular instrument of rubber, plastic, metal, or other material used for draining or injecting fluids through a body passage

   B. Culture--Growing of microorganisms in a special substance in the laboratory

   C. Sensitivity--Laboratory determination of the reaction of cultured organisms to various medications

   D. Expectorate--To expel mucus or other secrection from the mouth, throat, or lungs

   E. Pathology--Study of the alterations produced by disease

   F. Occult--Obscure or hidden from view

   G. Albuminuria--Presence of albumin in the urine

   H. Hematuria--Presence of blood in the urine

   I. Glycosuria--Presence of glucose in the urine

   J. Dysuria--Painful urination

   K. Requisition--Written request for a test or service available but not automatically performed

   L. Specimen--Small sample or part taken to show the nature of the whole

   M. Meatus--Opening or passage

   N. Vulva--External parts of the female reproductive system that surround the opening of the vagina

II. Guidelines for collecting specimens

   A. Follow the policies and procedures of the institution

   B. Make certain of the time, type, and amount of specimen to be collected

   C. Explain the procedure to the patient to gain his cooperation

   D. Use proper container; avoid overfilling; avoid contaminating the outside of the container

INFORMATION SHEET

E. Label specimen correctly with the patient's name and location, time of collection, and type of specimen

F. Complete necessary requisitions accurately

G. Wash hands thoroughly after collecting specimen

(CAUTION: Many specimens are highly infective. Observe strict medical asepsis in obtaining specimens.)

H. Send specimen to laboratory promptly or store at proper temperature until sent

I. On patient's chart, record the time, type of specimen, characteristics such as color or appearance, and amount; include any significant patient observations

J. Report any unusual symptoms or inability to obtain the specimen to the charge nurse; also report if the specimen is spilled or contaminated

K. Follow instructions carefully in collecting specimens to avoid mistakes and omissions which might increase the length and expense of the patient's hospitalization

III. Types of urine specimens and their collection

A. Clean single--Routine, usually obtained type

1. Collected as soon as possible after admission

2. Routine specimen collected during patient's stay, usually the first voided specimen of the day

3. In female patients, soap and water cleansing of the genital area immediately before obtaining the specimen is essential due to the presence of numerous bacteria around the urethra

B. Clean catch--Midstream urine obtained

1. Patient is instructed to cleanse the urethral area thoroughly

2. Small amount is voided into the toilet to rinse the urethra

3. Middle of the stream is voided into the container provided

4. Last urine is voided into the toilet

C. Twenty-four hour, cumulative, or complete--Entire quantity for period is collected and sent to the laboratory as one specimen

1. Receptacle for storing the urine is labeled and placed in a refrigerator near the patient's unit

INFORMATION SHEET

2. First or beginning specimen is obtained at a designated time and discarded
3. All subsequent specimens are saved and poured into the storage receptacle
4. Twenty-four hours after the initial specimen, the final specimen is collected and added
5. Entire amount of urine for the twenty-four hour period is sent to the laboratory with the proper requisition

D. Twenty-four hour, fractional--All urine is kept for the specified periods and sent to the laboratory in separate specimens

1. Specimens are collected for the prescribed period of time, usually periods of six to eight hours
2. Each storage receptacle is marked to show the hours in which the collective specimens were obtained
3. Initial specimen is obtained and discarded; all specimens are then saved, up to and including the one at the end of the time period
4. Second and subsequent time periods begin with the next specimen taken and end with the specimen taken at the end of the time period
5. The collected specimen for each time period is sent to the laboratory at the end of the time period, not at the end of the twenty-four hour period

E. Catheterized--Specimen obtained by surgical aseptic technique using a catheter

IV. Purposes of the different methods of collecting urine

A. Clean single

1. Aid in diagnosis and progress of a disease
2. Aid in determination of kidney and cardiac function
3. Determine organisms causing an infection

B. Clean catch--Determine presence of foreign substances or microorganisms

INFORMATION SHEET

C. Twenty-four hour, cumulative--Determine what wastes the kidneys are excreting and the amount of each

D. Twenty-four hour, fractional--Determine the diet and the amount of insulin necessary for a diabetic

E. Catheterized--Collection of a sterile specimen usually for culture and sensitivity of disease organisms

V. Feces or stool specimens

A. Feces may be examined for the presence of pus, blood, tissue, parasites, and helminths or to determine digestive function

B. Type of test determines the manner in which the specimen is to be collected and prepared; therefore, the person obtaining the specimen must know what test is to be done and the method by which the specimen is collected

C. Specimens must be labeled properly so the laboratory personnel know what test is to be done

D. Stool specimens should be sent to the laboratory as soon as collected and stored appropriately

VI. Sputum specimens

A. Obtained to aid in the diagnosis of respiratory disease

B. Specimens are usually obtained early in the morning before any food is taken

C. Before obtaining the specimen, the mouth should be rinsed with water to avoid presence of food particles in the specimen

D. The patient is instructed to raise material from the lungs by coughing and not simply expectorate saliva or the discharges of the nose and throat

VII. Gastric specimens

A. Examination of the stomach contents is one of the most widely used means of determining pathology of the stomach

B. Gross examination of vomitus and the manner in which it was vomited is observed as well as the more detailed laboratory examination

C. A nasogastric tube may be inserted to facilitate the collection of gastric contents

D. For some tests a specific meal is fed to the patient with the stomach contents withdrawn at specified intervals

E. Specimens may be examined for undigested food, visible or occult blood, organisms, digestive juices, or feces

COLLECTING SPECIMENS
UNIT XV

JOB SHEET #1--COLLECT A URINE SPECIMEN

I. Equipment needed

- A. Bedpan or urinal
- B. Covered specimen container
- C. Label
- D. Requisition
- E. Graduate

II. Procedure

- A. Wash hands
- B. Fill out label and laboratory requisition
- C. Identify patient and explain procedure
- D. Provide privacy
- E. Give bedpan or urinal
- F. After voiding, take bedpan or urinal to utility room
- G. Pour urine into a graduate
- H. Pour at least 120 cc (four ounces) into the specimen container
- I. Cover specimen container, attach label, and set in safe place
- J. Clean bedpan and return to designated area
- K. Provide for patient's comfort
- L. Wash hands
- M. Take or send specimen to laboratory
- N. Chart procedure and observations

COLLECTING SPECIMENS
UNIT XV

JOB SHEET #2--OBTAIN A CLEAN CATCH URINE SPECIMEN

I. Equipment needed

- A. Sterile urine specimen bottle with cover
- B. Label
- C. Requisition
- D. Cleaning agent
- E. Water
- F. Cotton balls
- G. Sterile gloves (for nurse)

II. Procedure for female bed patient

- A. Fill out label and laboratory requisition
- B. Wash hands
- C. Assemble equipment and take to bedside
- D. Identify patient and explain procedure
- E. Screen patient; provide privacy
- F. Drape the patient with a bath blanket or cover so the perineum is exposed
- G. Place patient on the bedpan
- H. Place equipment on bed between patient's feet
- I. Wash hands
- J. Put on gloves
- K. Cleanse the vulva
  1. Expose the urinary meatus by spreading the vulva open using the thumb and index finger
  2. Moisten cotton ball in the cleaning agent, usually liquid soap
  3. Cleanse area with one wipe from pubis to anus; discard cotton ball

JOB SHEET #2

4. Repeat cleansing approximately four more times until area around urethra is free of secretions

5. Rinse with water; dry with cotton balls

L. When the stream of urine has started, allow a little to run

M. Place the bottle to catch the midstream flow

N. Allow patient to finish voiding in the bedpan

O. Cover the bottle; rinse and wipe the outside without getting any water on the cap

P. Remove gloves

Q. Remove bedpan and provide for patient's comfort

R. Clean equipment and return to designated area

S. Label and take or send the specimen to the laboratory

T. Report and record the procedure

(NOTE: If clean-catch kit is used, follow manufacturer's instructions.)

III. Procedure for female ambulatory patient

A. Fill out label and laboratory requisition

B. Wash hands

C. Assemble equipment and take to bedside

D. Instruct patient

1. While holding labia open with thumb and index finger, cleanse area from front to back using one cotton ball for each stroke

2. Repeat cleansing three more times, once on each side of labia and once down center over urinary meatus

3. While still spreading labia, commence voiding, allowing first of stream to flow into toilet

4. Catch only the midstream urine in a sterile specimen bottle

5. Complete voiding in toilet

6. Cover specimen bottle

JOB SHEET #2

- E. After specimen is obtained, rinse and dry the outside of the bottle
- F. Wash hands
- G. Label and take or send the specimen to the laboratory
- H. Care for equipment
- I. Report and record the procedure

IV. Procedure for male ambulatory patient

- A. Fill out label and laboratory requisition
- B. Wash hands
- C. Assemble equipment and take to bedside
- D. Identify patient and explain procedure
- E. Instruct patient
    1. Cleanse the glans penis with a circular motion, beginning at the meatus and working away from it
    2. Repeat cleansing with three or four cotton balls and the cleansing solution
    3. Rinse with water
    4. Void a small amount into the toilet
    5. Catch only the midstream urine in a sterile specimen bottle
    6. Complete voiding in toilet
    7. Cover specimen bottle
- F. Rinse and dry the outside of the bottle
- G. Wash hands
- H. Label and take or send the specimen to the laboratory
- I. Care for equipment
- J. Report and record the procedure

(NOTE: For bed patient procedure is similar except patient is placed on the bedpan and assisted as needed by the nurse.)

COLLECTING SPECIMENS
UNIT XV

JOB SHEET #3--COLLECT A TWENTY-FOUR HOUR SPECIMEN

I. Equipment needed

A. Receptacle for storing urine

B. Bedpan or urinal

C. Graduate

D. Labels

E. Requisition

II. Procedure

A. Wash hands as needed throughout this procedure

B. Obtain storage receptacles from laboratory and label them

C. Place receptacles in designated area

D. Give a detailed explanation to the patient of the procedure; stress the importance of collecting all the urine passed during the required time

E. Signs should be put at the patient's bedside and in the bathroom or utility room stating that a twenty-four hour urine specimen is being kept

F. Inform patient if he is on a specific liquid intake

G. At the beginning time, have the patient void and DISCARD this specimen; all other urine for the specified time period will be saved, measured, and poured into the storage receptacle

H. At the end of the time period, have the patient void and add this last specimen to the collection

I. When the collection is completed, inform the patient and remove the signs

J. Label and take or send the specimens to the laboratory

K. Report and record the procedure

(NOTE: These directions can be used for a cumulative or fractional twenty-four hour specimen. If the urine is to be collected for three or four time periods during the twenty-four hour period, the initial specimen is discarded; all other specimens including the one at the end of the time period are saved. At the end of each period, the collected urine is sent to the laboratory, labeled and with the proper requisition.)

COLLECTING SPECIMENS
UNIT XV

JOB SHEET #4-COLLECT A FECES OR STOOL SPECIMEN

I. Equipment needed

  A. Bedpan or commode

  B. Two tongue depressors

  C. Plastic or cardboard container with cover

  D. Paper towel

  E. Label

  F. Laboratory requisition

II. Procedure

  A. Check the physician's orders for specific instructions and reason for collecting the specimen

  B. Fill out the label for the container and the laboratory requisition

  C. Wash hands

  D. Inform the patient of the procedure and ask him to use the bedpan or commode so the specimen may be obtained

  (NOTE: If the patient is ambulatory, he may be allowed to use the bedpan on a nearby chair, or in some instances the bedpan or disposable container may be placed in the toilet just under the toilet seat.)

  E. After obtaining the specimen, take the bedpan to the utility room

  F. Using tongue depressors, place about two tablespoons of the fecal material in the container; cover container

  G. Wrap the soiled tongue depressors in a paper towel and discard

  H. Care for the bedpan in the usual manner

  I. Wash hands

  J. Label and take the specimen to the laboratory promptly

  (NOTE: Stool or feces specimens are usually examined while they are still warm so it is important for them to be taken to the laboratory as soon as possible.)

  K. Report and record the procedure and observations

COLLECTING SPECIMENS
UNIT XV

JOB SHEET #5-COLLECT A SPUTUM SPECIMEN

I. Equipment needed

A. Sputum container with cover

B. Label.

C. Laboratory requisition

II. Procedure

A. Check physician's orders

B. Fill out label on container and requisition

C. Wash hands

D. Identify patient and explain procedure

(NOTE: Explain that sputum is the mucus coughed up from his lungs and not the saliva in his mouth. Also explain the importance of keeping his mouth clean after eating to avoid contamination of the specimen with particles of food.)

E. Place sputum container with the cover at the bedside

F. Leave container at bedside until sufficient sputum is collected or for a twenty-four hour period, whichever is specified in the physician's orders

G. At the specified time, seal the container with the cover

H. Wash and dry the outside of the container

I. Wash hands

J. Take or send the specimen to the laboratory

K. Report and record the procedure

(NOTE: Follow manufacturer's instructions for use of containers.)

COLLECTING SPECIMENS
UNIT XV

TEST

1. Match the term on the right to the correct definition.

_____a. Presence of glucose in the urine

_____b. Small sample or part taken to show the nature of the whole

_____c. Obscure or hidden from view

_____d. Opening or passage

_____e. External parts of the female reproductive system that surround the opening of the vagina

_____f. Presence of albumin in the urine

_____g. Written request for a test or service available but not automatically performed

_____h. Laboratory determination of the reaction of cultured organisms to various medications

_____i. Study of the alterations produced by disease

_____j. Growing of microorganisms in a special substance in the laboratory

_____k. To expel mucus or other secretion from the mouth, throat, or lungs

_____l. Presence of blood in the urine

_____m. Tubular instrument of rubber, plastic, metal, or other material used for draining or injecting fluids through a body passage

_____n. Painful urination

1. Catheter
2. Culture
3. Sensitivity
4. Expectorate
5. Pathology
6. Occult
7. Albuminuria
8. Hematuria
9. Dysuria
10. Requisition
11. Specimen
12. Meatus
13. Vulva
14. Glycosuria

2. Discuss guidelines for collecting specimens.

3. Discuss the five types of urine specimens and their collection.

   a.

   b.

   c.

d.

e.

4. Discuss the purposes of the five types of urine specimens.

   a.

   b.

   c.

   d.

   e.

5. Discuss the collecting of feces or stool specimens.

6. Describe the collecting of sputum specimens.

7. Discuss gastric specimens.

8. Demonstrate the ability to:
    a. Collect a urine specimen.
    b. Obtain a clean catch urine specimen.
    c. Collect a twenty-four hour specimen.
    d. Collect a feces or stool specimen.
    e. Collect a sputum specimen.

(NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

COLLECTING SPECIMENS
UNIT XV

ANSWERS TO TEST

1. a. 14
   b. 11
   c. 6
   d. 12
   e. 13
   f. 7
   g. 10
   h. 3
   i. 5
   j. 2
   k. 4
   l. 8
   m. 1
   n. 9

2. Discussion should include:

   a. Follow the policies and procedures of the institution

   b. Make certain of the time, type, and amount of specimen to be collected

   c. Explain the procedure to the patient to gain his cooperation

   d. Use proper container; avoid overfilling; avoid contaminating the outside of the container

   e. Label specimen correctly with the patient's name and location, time of collection, and type of specimen

   f. Complete necessary requisitions accurately

   g. Wash hands thoroughly after collecting specimen

   h. Send specimen to laboratory promptly or store at proper temperature until sent

   i. On patient's chart, record the time, type of specimen, characteristics such as color or appearance, and amount; include any significant patient observations

   j. Report any unusual symptoms or inability to obtain the specimen to the charge nurse; also report if the specimen is spilled or contaminated

   k. Follow instructions carefully in collecting specimens to avoid mistakes and omissions which might increase the length and expense of the patient's hospitalization

3. Discussion should include:

   a. Clean single--Routine, usually obtained type

      1) Collected as soon as possible after admission

      2) Routine specimen collected during patient's stay, usually the first voided specimen of the day

      3) In female patients, soap and water cleansing of the genital area immediately before obtaining the specimen is essential due to the presence of numerous bacteria around the urethra

   b. Clean catch--Midstream urine obtained

      1) Patient is instructed to cleanse the urethral area thoroughly

      2) Small amount is voided into the toilet to rinse the urethra

      3) Middle of the stream is voided into the container provided

      4) Last urine is voided into the toilet

   c. Twenty-four hour, cumulative, or complete--Entire quantity for period is collected and sent to the laboratory as one specimen

      1) Receptacle for storing the urine is labeled and placed in a refrigerator near the patient's unit

      2) First or beginning specimen is obtained at a designated time and discarded

      3) All subsequent specimens are saved and poured into the storage receptacle

      4) Twenty-four hours after the initial specimen, the final specimen is collected and added

      5) Entire amount of urine for the twenty-four hour period is sent to the laboratory with the proper requisition

   d. Twenty-four hour, fractional--All urine is kept for the specified periods and sent to the laboratory in separate specimens

      1) Specimens are collected for the prescribed period of time, usually periods of six to eight hours

      2) Each storage receptacle is marked to show the hours in which the collective specimens were obtained

      3) Initial specimen is obtained and discarded; all specimens are then saved, up to and including the one at the end of the time period

        4) Second and subsequent time periods begin with the next specimen taken and end with the specimen taken at the end of the time period

        5) The collected specimen for each time period is sent to the laboratory at the end of the time period, not at the end of the twenty-four hour period

    e. Catheterized--Specimen obtained by surgical aseptic technique using a catheter

4. Discussion should include:

    a. Clean single

        1) Aid in diagnosis and progress of a disease

        2) Aid in determination of kidney and cardiac function

        3) Determine organisms causing an infection

    b. Clean catch--Determine presence of foreign substances or microorganisms

    c. Twenty-four hour, cumulative--Determine what wastes the kidneys are excreting and the amount of each

    d. Twenty-four hour, fractional--Determine the diet and the amount of insulin necessary for a diabetic

    e. Catheterized--Collection of a sterile specimen usually for culture and sensitivity of disease organisms

5. Discussion should include:

    a. Feces may be examined for the presence of pus, blood, tissue, parasites, and helminths or to determine digestive function

    b. Type of test determines the manner in which the specimen is to be collected and prepared; therefore, the person obtaining the specimen must know what test is to be done and the metnod by which the specimen is collected

    c. Specimens must be labeled properly so the laboratory personnel know what test is to be done

    d. Stool specimens should be sent to the laboratory as soon as collected and stored appropriately

6. Description should include:

    a. Obtained to aid in the diagnosis of respiratory disease

    b. Specimens are usually obtained early in the morning before any food is taken

   c. Before obtaining the specimen, the mouth should be rinsed with water to avoid presence of food particles in the specimen

   d. The patient is instructed to raise material from the lungs by coughing and not simply expectorate saliva or the discharges of the nose and throat

7. Discussion should include:

   a. Examination of the stomach contents is one of the most widely used means of determining pathology of the stomach

   b. Gross examination of vomitus and the manner in which it was vomited is observed as well as the more detailed laboratory examination

   c. A nasogastric tube may be inserted to facilitate the collection of gastric contents

   d. For some tests a specific meal is fed to the patient with the stomach contents withdrawn at specified intervals

   e. Specimens may be examined for undigested food, visible or occult blood, organisms, digestive juices, or feces

8. Performance skills will be evaluated to the satisfaction of the instructor.

BASIC CONCEPTS OF PHYSICAL SCIENCES
UNIT I

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe states of matter and state rules of nature. He should be able to differentiate between kinds of matter and between physical and chemical changes. He should be able to list forms of energy and properties of acids and bases, discuss mineral salts, and match heat measurements and U.S. and metric measurements. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with basic concepts of physical sciences to the correct definition.
2. Describe the three states of matter.
3. State the three rules of nature governing the activities of solutions.
4. Select from a list of kinds of matter the elements, compounds, or mixtures.
5. Differentiate between physical and chemical changes.
6. List five forms of energy.
7. List the properties of acids.
8. List the properties of bases.
9. List the common properties of acids and bases.
10. Identify the average normal concentration of gastric juice, urine, and blood when given a diagram of the pH scale.
11. Discuss briefly mineral salts and their significance in the human body.

BASIC CONCEPTS OF PHYSICAL SCIENCES
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Make transparencies.

   D. Discuss terminal and specific objectives.

   E. Discuss information sheet.

   F. Direct students through the different learning paths for each specific objective.

   G. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Make sure you are able to perform according to the type of performance called for by each specific objective.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1--Forms of Energy

      2. TM 2--pH Scale

   D. Test

   E. Answers to test

II. References:

A. Luros, Gretchen and Jack C. Towne. *Essentials of Chemistry*. Philadelphia, Pennsylvania: J.B. Lippincott Company, 1966.

B. Miller, Benjamin F. and Claire Brackman Keane. *Encyclopedia and Dictionary of Medicine and Nursing*. Philadelphia, Pennsylvania: 1972.

C. Thomas, Virginia E. *Life Sciences for Health Technologies*. Los Angeles, California: Technicourse Inc., 1970.

BASIC CONCEPTS OF PHYSICAL SCIENCES
UNIT I

INFORMATION SHEET

I. Terms and definitions

A. Matter--Physical material having form and weight; anything that occupies space and has weight

B. Plasma--The liquid part of the blood

C. Solution--A liquid containing dissolved solids called solutes

D. Element--A simple pure substance which cannot be decomposed by ordinary chemical reactions

E. Compound--Two or more elements united in a fixed ratio

F. Mixture--Two or more elements or compounds which are not chemically combined

G. Chemical change--One which affects the composition of a substance

H. Physical change--One which does not affect the composition of matter

I. Energy--That which produces change or results from change; the ability or power to do work

J. Acid--A substance that yields hydrogen ions in solution

K. Base--A substance that yields hydroxyl ions in solution

L. pH--The hydrogen ion concentration of a solution; the degree to which a solution is acidic or basic

M. Mineral salts--Compounds formed from the reaction of an acid with a base

N. Electrolyte--Any compound, when dissolved in water, that separates into charged particles (ions) capable of conducting an electrical current

O. Chemistry--The science which deals with the composition of substances and the changes they undergo

P. Physics--The science dealing with matter and energy and their interactions

Q. Distribution--The position, arrangement, or frequency of occurrence

R. Concentration--The relative content or strength of an ingredient

S. Pressure--Stress, strain, or tension due to compression, expansion, pull, or thrust

INFORMATION SHEET

T. Calorie--A unit of measurement of heat

(NOTE: Gram calorie or small calorie--The amount of heat required to raise the temperature of one gram of water one degree centigrade. Kilogram calorie or large calorie--The amount of heat required to raise the temperature of one kilogram of water one degree centigrade.)

U. Hydrostatic pressure--The pressure a liquid exerts as a result of its own weight

V. Acidosis--A condition resulting from accumulation of acid or depletion of the alkaline reserve in the blood and body tissues

W. Alkalosis--A condition resulting from accumulation of base or loss of acid

X. Ion--An atom or group of atoms carrying an electric charge

II. States of matter

A. Solid--Has a definite shape, volume, and weight

Examples: Bones, tissues

B. Liquid--Has a definite volume and weight but assumes the shape of the container in which it is placed

Examples: Plasma, tissue fluid

C. Gas--Has a definite weight but indefinite shape and volume

Example: Oxygen and carbon dioxide in the lungs

III. Rules of nature governing the activities of solutions

A. Solutions always tend toward a state of equal concentration

B. Solutions of higher concentration will tend to flow toward solutions of lower concentration

C. Liquids, including solutions, always flow toward a condition of least possible hydrostatic pressure

IV. Kinds of matter

A. Elements

1. C--Carbon

2. H--Hydrogen

INFORMATION SHEET

3. O--Oxygen
4. N--Nitrogen
5. K--Potassium
6. P--Phosphorous
7. Na--Sodium
8. Cl--Chlorine
9. Fe--Iron
10. I--Iodine

B. Compounds

1. $C_6H_{12}O_6$--Glucose (simple sugar)
2. NaCl--Sodium chloride (table salt)
3. H_2O--Water
4. CO_2--Carbon dioxide
5. Fe_2O_3--Iron oxide
6. NaOH--Sodium hydroxide
7. HCl--Hydrochloric acid (present in gastric juices)
8. ZnO--Zinc oxide (used in ointments)
9. KCl--Potassium chloride
10. CH_3OH--Methyl or wood alcohol

C. Mixtures

1. Blood
2. Urine
3. Milk
4. Salt water
5. Calamine lotion
6. Air
7. Granite
8. Mortar

INFORMATION SHEET

V. Physical and chemical changes
  A. Chemical
    1. Produce new substance
    2. Are irreversible or reversible only with difficulty

    Examples: Rusting of iron, souring of milk, burning wood, digestion of food

  B. Physical
    1. Produce no new substance
    2. Are easily reversible

    Examples: Heating of iron, freezing water to ice or heating water to steam, chewing of food, cutting a finger

VI. Forms of energy (Transparency 1)
  A. Heat
  B. Mechanical
  C. Radiant
  D. Electrical
  E. Chemical

VII. Properties of acids
  A. Sour taste
  B. Pungent odor
  C. Excessive concentration in the body fluids causes acidosis

VIII. Properties of bases
  A. Bitter taste
  B. Soapy or slippery feeling
  C. Excessive concentration in the body fluids causes alkalosis

INFORMATION SHEET

IX. Common properties of acids and bases

  A. React with each other to produce salts and water

  B. Essential to the maintenance of a normal acid-base balance in the body

  C. Cause certain dyes to undergo a color change

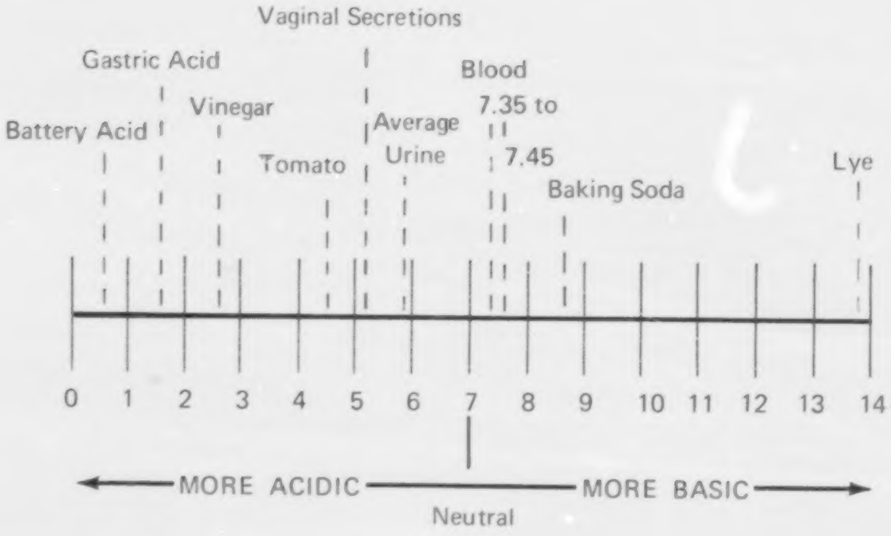
X. pH scale (Transparency 2)

  A. Gastric juice--1.5

  B. Urine--5.8

  C. Blood--7.35 to 7.45

pH SCALE


Vaginal Secretions
Gastric Acid
Vinegar
Battery Acid
Tomato
Average Urine
Blood 7.35 to 7.45
Baking Soda
Lye
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
MORE ACIDIC
MORE BASIC
Neutral

INFORMATION SHEET

XI. Mineral salts

A. Found in bones and teeth primarily as calcium and phosphorous: Formula--calcium phosphate--$Ca_3\ (PO_4)_2$

B. Help maintain acid-base balance

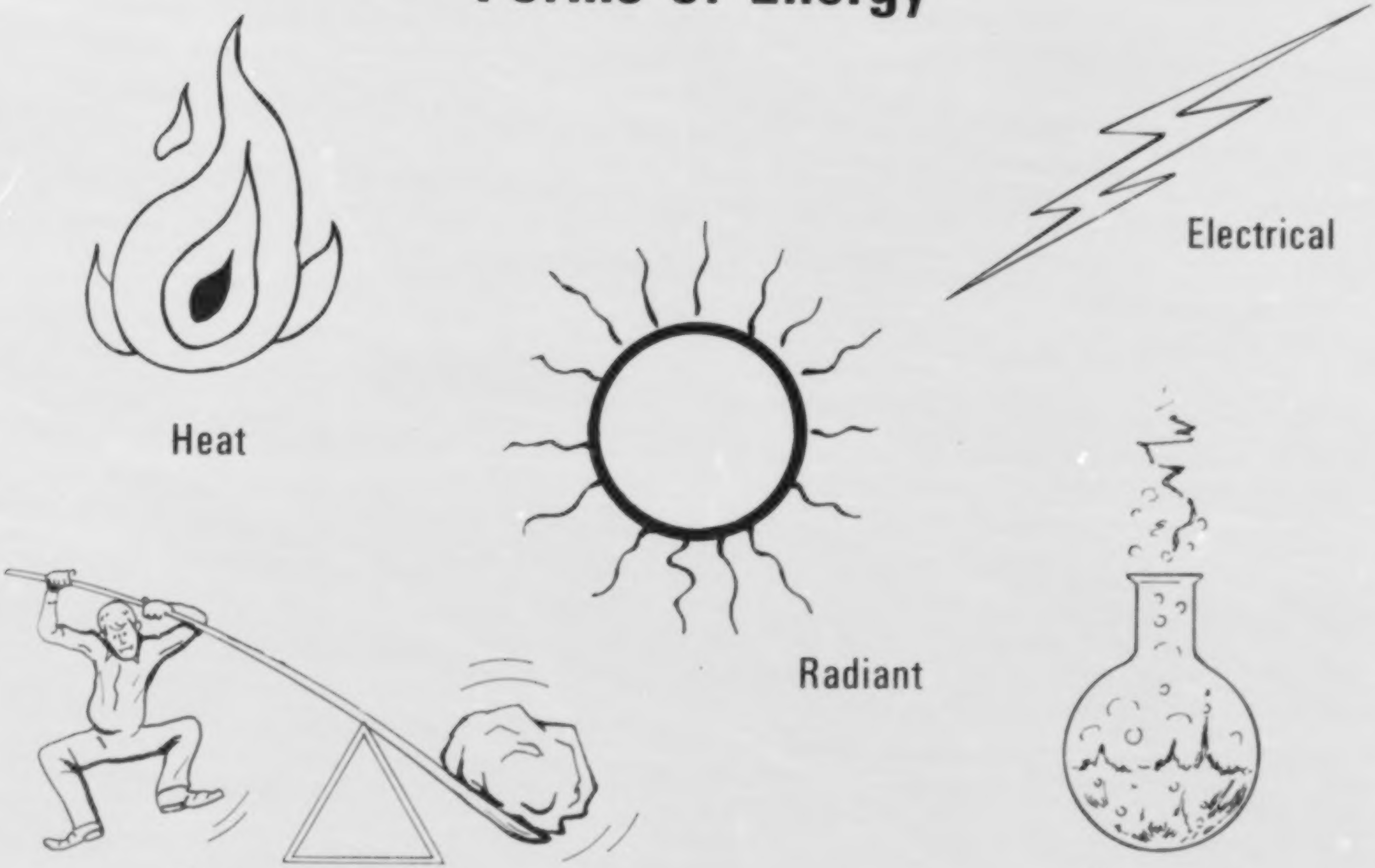
C. Help maintain fluid balance

D. In body fluids, the salts which are electrolytes separate into ionized particles

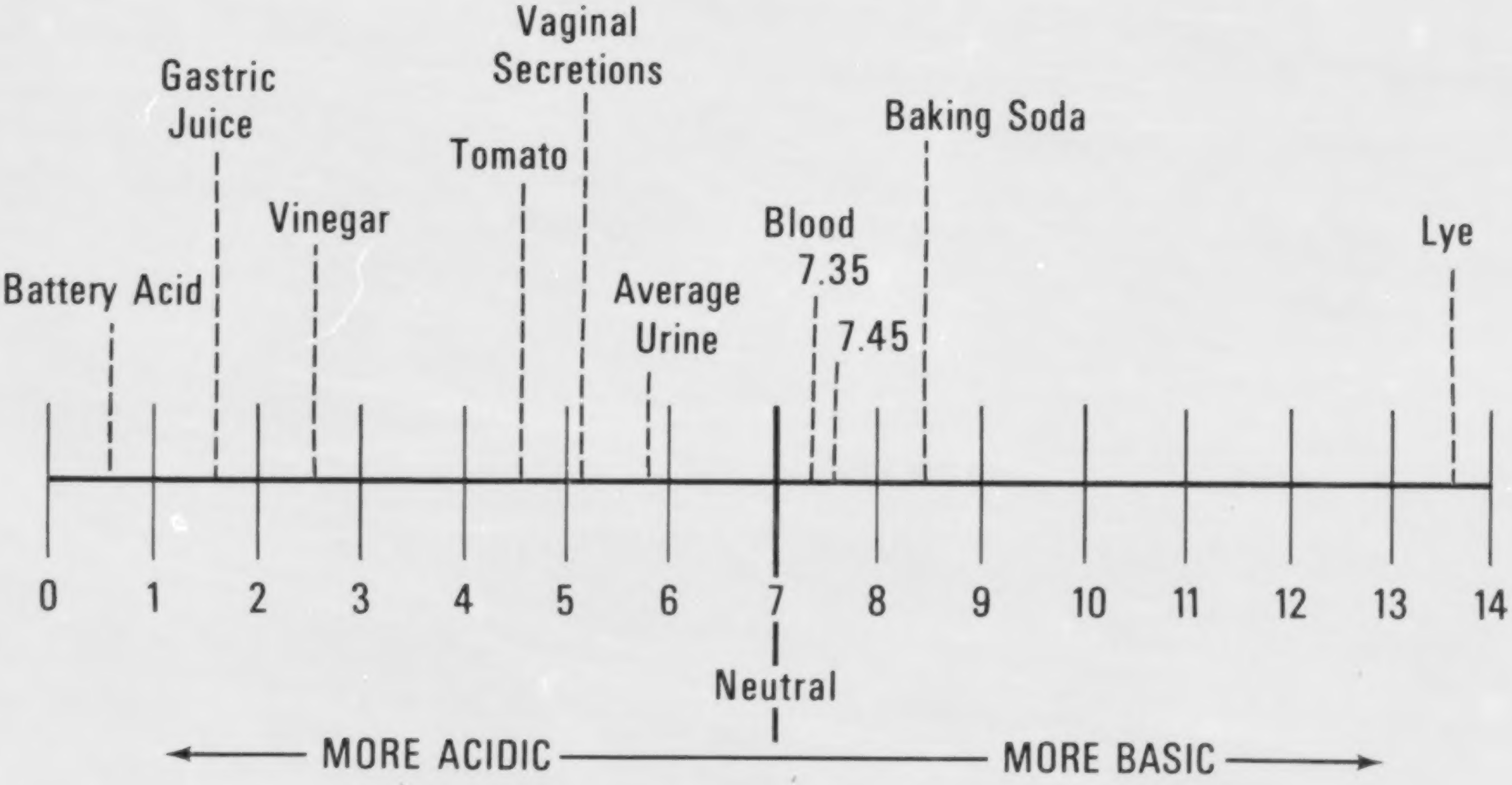
Examples of electrolytes:

Positive charges	Negative charges
Sodium Na^+	Chloride Cl^-
Potassium K^+	Bicarbonate HCO_3^-
Calcium Ca^{++}	Sulfate $SO_4^=$
Magnesium Mg^{++}	Phosphate $PO_4^{\equiv}$

Forms of Energy


Heat
Electrical
Radiant
Chemical
Mechanical

pH Scale


Vaginal Secretions
Gastric Juice
Baking Soda
Tomato
Vinegar
Blood
7.35
7.45
Lye
Battery Acid
Average Urine
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Neutral
MORE ACIDIC
MORE BASIC

BASIC CONCEPTS OF PHYSICAL SCIENCES
UNIT I

TEST

1. Match the terms on the right to their correct definition.

_____a. The liquid part of the blood

_____b. A substance that yields hydrogen ions in solution

_____c. Two or more elements or compounds which are not chemically combined

_____d. Compounds formed from the reaction of an acid with a base

_____e. One which does not affect the composition of matter

_____f. Physical material having form and weight; anything that occupies space and has weight

_____g. The hydrogen ion concentration of a solution; the degree to which a solution is acidic or basic

_____h. A simple pure substance which cannot be decomposed by ordinary chemical reactions

_____i. An atom or group of atoms carrying an electric charge

_____j. The pressure a liquid exerts as a result of its own weight

_____k. A unit of measurement of heat

_____l. A condition resulting from accumulation of base or loss of acid

_____m. The relative content or strength of an ingredient

_____n. The science which deals with the composition of substances and the changes they undergo

1. Acid
2. pH
3. Mixture
4. Solution
5. Matter
6. Physics
7. Hydrostatic pressure
8. Alkalosis
9. Pressure
10. Base
11. Energy
12. Plasma
13. Electrolyte
14. Chemistry
15. Acidosis
16. Calorie
17. Physical change
18. Element
19. Mineral salts
20. Chemical change
21. Distribution
22. Concentration
23. Compound
24. Ion

______o. The position, arrangement, or frequency of occurrence

______p. The science dealing with matter and energy and their interactions

______q. Stress, strain, or tension due to compression, expansion, pull, or thrust

______r. A condition resulting from accumulation of acid or depletion of the alkaline reserve in the blood and body tissues

______s. A liquid containing dissolved solids called solutes

______t. Two or more elements united in a fixed ratio

______u. One which affects the composition of a substance

______v. That which produces change or results from change; the ability or power to do work

______w. A substance that yields hydroxyl ions in solution

______x. Any compound, when dissolved in water, that separates into charged particles (ions) capable of conducting an electrical current

2. Describe the three states of matter.

   a. Solid--

   b. Liquid--

   c. Gas--

3. State the three rules of nature governing the activities of solutions.

   a.

   b.

   c.

4. Select from the following list the elements, compounds, and mixtures. Indicate by placing an E to the left of elements, a C to the left of compounds, and a M in front of mixtures.

_____a. Air

_____b. Iron

_____c. Water

_____d. Blood

_____e. Glucose

_____f. Potassium

_____g. Chlorine

_____h. Potassium chloride

_____i. Mortar

_____j. Zinc oxide

_____k. Salt water

_____l. Iron oxide

_____m. Hydrogen

_____n. Oxygen

_____o. Urine

5. Differentiate between physical and chemical changes by placing a P to the left of the descriptions of physical changes and C to the left of the descriptions of chemical changes.

_____a. Produce no new substance

_____b. Produce new substance

_____c. Are irreversible or reversible only with difficulty

_____d. Are easily reversible

6. List five forms of energy.

a.

b.

c.

d.

e.

7. List three properties of acids.

   a.

   b.

   c.

8. List three properties of bases.

   a.

   b.

   c.

9. List three common properties of acids and bases.

   a.

   b.

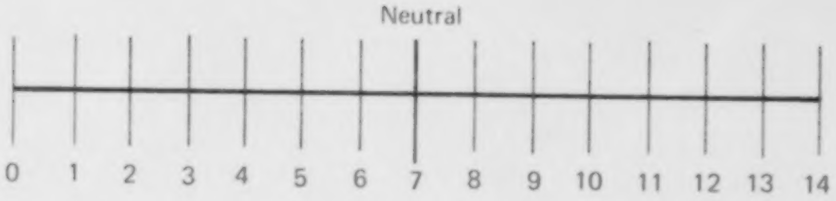
   c.

10. On the following pH scale, identify the average normal concentration of:

    a. Gastric juice

    b. Urine

    c. Blood



11. Discuss briefly mineral salts and their significance in the human body.

BASIC CONCEPTS OF PHYSICAL SCIENCES
UNIT I

ANSWERS TO TEST

1. a. 12
   b. 1
   c. 3
   d. 19
   e. 17
   f. 5
   g. 2
   h. 18
   i. 24
   j. 7
   k. 16
   l. 8
   m. 22
   n. 14
   o. 21
   p. 6
   q. 9
   r. 15
   s. 4
   t. 23
   u. 20
   v. 11
   w. 10
   x. 13

2. a. Solid--Has a definite shape, volume, and weight
   b. Liquid--Has a definite volume and weight but assumes the shape of the container in which it is placed
   c. Gas--Has a definite weight but indefinite shape and volume

3. a. Solutions always tend toward a state of equal concentration
   b. Solutions of higher concentration will tend to flow toward solutions of lower concentration
   c. Liquids, including solutions, always flow toward a condition of least possible hydrostatic pressure

4. a. M
   b. E
   c. C
   d. M
   e. C
   f. E
   g. E
   h. C
   i. M
   j. C
   k. M
   l. C
   m. E
   n. E
   o. M

5. a. P
   b. C
   c. C
   d. P

6. a. Heat
   b. Mechanical
   c. Radiant
   d. Electrical
   e. Chemical
7. a. Sour taste
   b. Pungent odor
   c. Excessive concentration in the body fluids causes acidosis
8. a. Bitter taste
   b. Soapy or slippery feeling
   c. Excessive concentration in the body fluids causes alkalosis
9. a. React with each other to produce salts and water
   b. Essential to the maintenance of a normal acid-base balance in the body
   c. Cause certain dyes to undergo a color change
10. a. 1.5
    b. 5.8
    c. 7.35 to 7.45
11. Discussion should include:
    a. Found in bones and teeth primarily as calcium and phosphorous
    b. Help maintain acid-base balance
    c. Help maintain fluid balance
    d. In body fluids, the salts which are electrolytes separate into ionized particles

BASIC CONCEPTS OF THE LIFE SCIENCES
UNIT II

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to match terms and definitions, list compounds and characteristics of protoplasm, describe the functions of enzymes and protoplasm, and label the parts of a cell. The student should be able to describe the movement of materials through membranes and the kinds of tissues and list the major organ systems. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with basic concepts of the life sciences to the correct definitions.
2. Name the six compounds in protoplasm and one function of each.
3. List eight characteristics of protoplasm.
4. Describe three functions of enzymes.
5. Name the two components of the human body giving the percentage of each.
6. Label the parts of a cell on a given diagram.
7. Describe methods of movement of materials through cell membranes.
8. Differentiate between physiological and non-physiological solutions.
9. Describe the four kinds of tissue.
10. Describe three kinds of membranes.
11. List the ten major organ systems.

BASIC CONCEPTS OF THE LIFE SCIENCES
UNIT II

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information and assignment sheets.

  F. Assist with completion of assignment sheet.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Complete assignment sheet.

  D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency masters

    1. TM 1--The Cell

    2. TM 2--Solutions

    3. TM 3--Epithelial Tissues

    4. TM 4--Epithelial Tissues (Continued)

    5. TM 5--Connective Tissues

    6. TM 6--Voluntary Muscle

7. TM 7--Involuntary Muscle
8. TM 8--Cardiac Muscle
9. TM 9--Nerve Cell

D. Assignment Sheet #1--Movements of Materials

E. Answers to assignment sheet

F. Test

G. Answers to test

II. References:

A. Anthony, Catherine Parker. *Structure and Function of the Body.* St. Louis, Missouri: C.V. Mosby Company, 1964.

B. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1969.

C. Manner, Harold W. *Elements of Anatomy and Physiology.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1962.

D. Thomas, Virginia E. *Life Sciences for Health Technologies.* Los Angeles, California: Technicourse Inc., 1970.

E. Taber, Clarence Wilbur. *Taber's Cyclopedic Medical Dictionary.* Philadelphia, Pennsylvania: F.A. Davis Company, 1965.

BASIC CONCEPTS OF THE LIFE SCIENCES
UNIT II

INFORMATION SHEET

I. Terms and definitions

A. Biology--Study of life

B. Anatomy--Study of structure

C. Physiology--Study of function

D. Microbiology--Study of minute living organisms

E. Protoplasm--Living material in all cells

F. Cytoplasm--Part of the protoplasm outside the nucleus

G. Enzyme--Organic catalyst produced by living cells

H. Catalyst--Substance which increases the rate of a chemical reaction without being permanently altered itself

I. Cell--Smallest unit of living matter

J. Cytology--Study of cells

K. Histology--Study of the microscopic structure of tissues

L. Tissue--Group of like cells joined together to perform a specific function

M. Homeostasis--State of chemical balance between the cell and its environment

N. Phagocytosis--Ingestion and digestion of a particular substance, such as bacteria or dust, by a cell

O. Diffusion--Continual movement and intermingling of molecules in liquids, gases, or solids

P. Osmosis--Passage of a solvent through a semi-permeable membrane into a more concentrated solution

Q. Semi-permeable--Permitting passage of only certain molecules

R. Molecule--Smallest unit into which a substance may be divided without losing its characteristics

S. Striated--Striped; marked by streaks

INFORMATION SHEET

T. Smooth--Plain; lacking stripes or striae

U. Visceral--Pertaining to the internal organs

V. Metabolism--Sum total of the physical and chemical processes and reactions taking place within an organism

W. Catabolism--Complex compounds are changed into simpler ones with the release of energy

X. Anabolism--Simple compounds are changed into more complex ones with the use of energy

Y. Conductivity--Ability to convey an impulse

Z. Contractility--Ability to change its form or shape

AA. Irritability--Ability to respond to a stimulus

BB. Adaptability--Ability to adjust to a limited extent to changes in the environment

CC. Integumentary system--The skin

DD. Solute--Substance that is dissolved in a solution

EE. Solvent--Liquid in which another substance is dissolved

II. Compounds in protoplasm and their functions

A. Water--Acts as the solvent in all cell chemistry

B. Proteins--Form the structural framework

C. Carbohydrates--Provide energy

D. Fats--Provide energy

E. Nucleic acids--Control growth and reproduction

F. Mineral salts--Act as buffers in acid-base balance, maintain fluid and electrolyte balance, and aid in structure of the body

III. Characteristics of protoplasm

A. Organization

B. Growth

C. Reproduction

INFORMATION SHEET

- D. Adaptability
- E. Irritability
- F. Contractility
- G. Excretion
- H. Secretion
- I. Conductivity
- J. Metabolism

IV. Some functions of enzymes (Over 650 known enzymes)

- A. In cells, enzymes act as a catalyst speeding chemical reactions
- B. In digestive tract, enzymes break food down into simpler forms that can be used by the cells
- C. Each enzyme will act only upon a certain substance or group of closely related substances

  Examples: Ptyalin (mouth) acts upon starches; rennin (stomach) acts upon milk protein; pepsin (stomach) acts upon protein; lipase (small intestine) acts upon fats; erepsin (small intestine) acts upon simple proteins

V. Components of the human body

- A. Solids--40%
- B. Liquids--60%

VI. The cell (Transparency 1)

- A. Cell membrane--The outer wall; holds the cell together
- B. Cytoplasm--The colorless, transparent substance containing dissolved salts and food substances
- C. Nucleus--The control center containing chromatin and DNA
- D. Mitochondria--The areas that carry on chemical reactions
- E. Chromatin granules or material--The part of the nucleus which regulates cell production and growth
- F. Centrosome--A region near the nucleus that contains some DNA and aids in cell division

INFORMATION SHEET

VII. Movement of materials through cell membranes

A. Physiologic or active transport

1. Requires energy from the cell

2. Cell wraps itself around a foreign particle

Example: Phagocytosis in which a cell ingests and digests a foreign particle

B. Physical or passive transport

1. Diffusion—Particles move to equalize concentration throughout

Example: The dispersion of carbon dioxide and oxygen to areas of lesser concentration through the membrane of the lung

2. Filtration—Particles move through a filter or membrane that prevents passage of certain molecules

Example: The spleen filters the blood removing wastes, old red cells, and foreign substances

3. Osmosis—Solvent molecules pass through a semi-permeable membrane to equalize concentration on each side

Example: When there is an increase in the amount of salt in tissue fluid, water moves into the tissues to lower the salt concentration

VIII. Physiological and non-physiological solutions (Transparency 2)

A. Physiological—Isotonic or normal solution—A 0.9% salt solution in which red blood cells normally exist; the same concentration of salt is present in the red cell and the surrounding fluid

B. Non-physiological—Concentration of salt in the surrounding fluid differs from that in the red cell

1. Hypertonic solution—If the solution outside the cell has a higher concentration of salt than 0.9%, osmosis takes place and water is drawn out of the cell; the cell shrinks and is destroyed

2. Hypotonic solution—If the solution outside the cell has a lower concentration of salt than 0.9%, osmosis takes place and water is drawn into the cell; the cell expands and may rupture

INFORMATION SHEET

IX. Tissues

A. Epithelial (Transparencies 3 and 4)

1. Cells are close together

2. Provides covering for surfaces inside and outside the body

3. Functions include protection of other tissues, secretion, and excretion

Examples: Skin, nails, blood vessels, lining of body cavities

B. Connective (Transparency 5)

1. Many varieties

2. May be thin and fragile or tough and strong

3. Protects, supports, and binds the body together

Examples: Fatty tissue, ligaments, tendons

C. Muscle

1. Voluntary, striated, skeletal muscles move the body (Transparency 6)

Example: External muscles and those that move the eyeball and tongue

2. Involuntary, smooth, visceral muscles control internal functions (Transparency 7)

Example: Those found in digestive system

3. Cardiac, striated, involuntary muscles (Transparency 8)

Example: The heart muscle

D. Nerve--Conducts or carries messages (Transparency 9)

Examples: Brain, spinal cord, body nerves

X. Membranes

A. Mucous membranes--Secrete mucus and protect the walls of passageways that open to the outside of the body

Examples: Digestive and respiratory tracts

INFORMATION SHEET

B. Serous membranes--Secrete serous fluids which lubricate surfaces of inner organs

Examples: Pleura which lines the chest cavity and covers the lungs

C. Cutaneous membrane--Covers and protects the body

XI. Major organ systems

A. Integumentary

B. Skeletal

C. Muscular

D. Digestive

E. Reproductive

F. Urinary

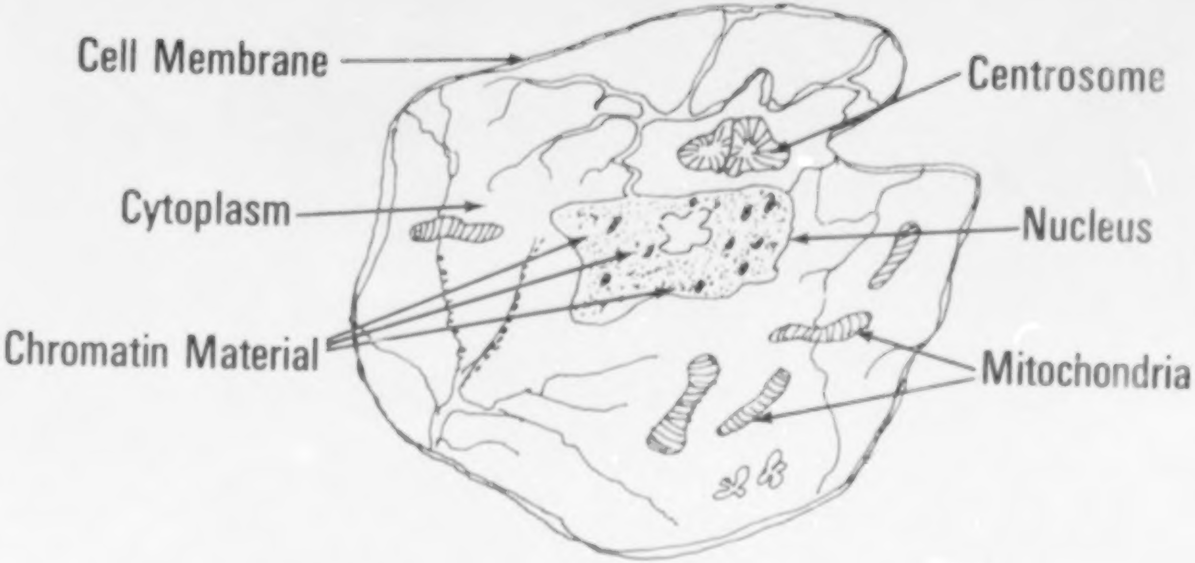
G. Circulatory

H. Respiratory

I. Nervous

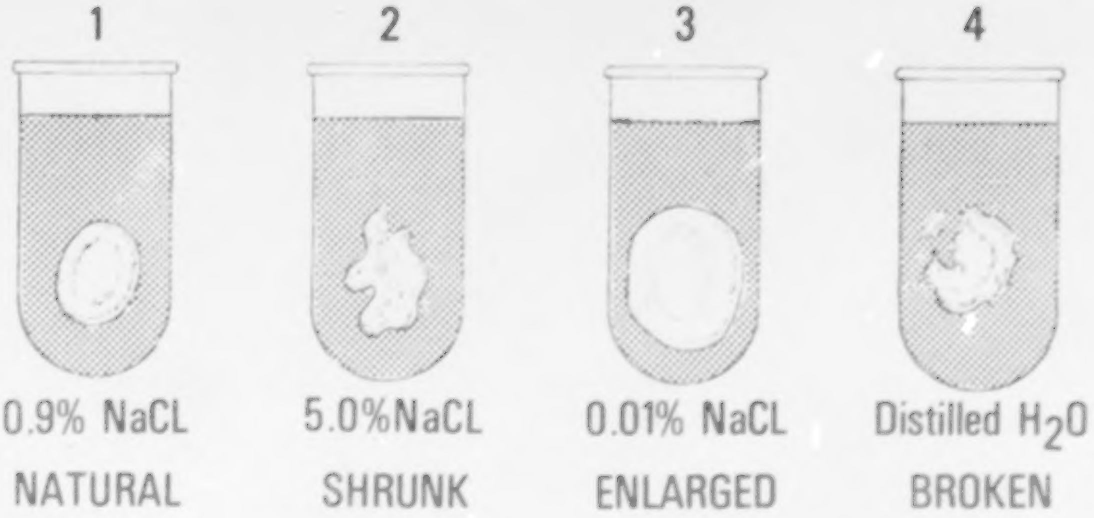
J. Endocrine

The Cell


Cell Membrane
Centrosome
Cytoplasm
Nucleus
Chromatin Material
Mitochondria

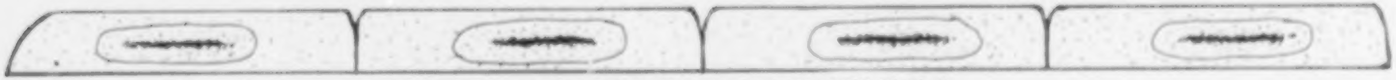
Solutions

1 Isotonic Solution
2 Hypertonic Solution
3 and 4 Hypotonic Solutions

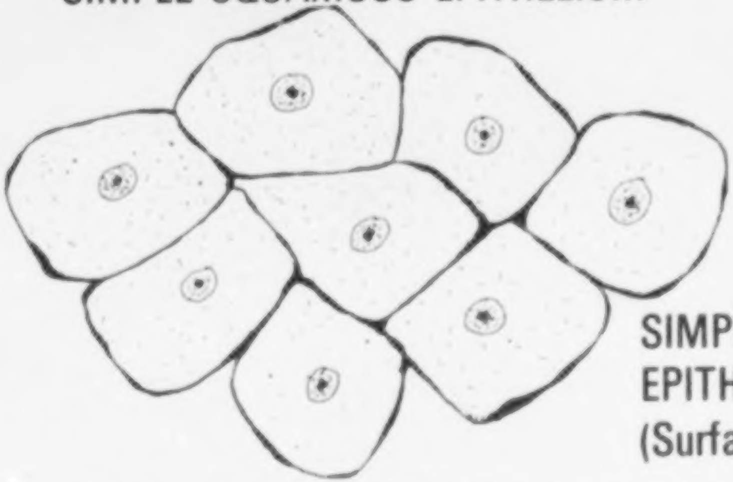

1
2
3
4
0.9% NaCL
NATURAL
5.0%NaCL
SHRUNK
0.01% NaCL
ENLARGED
Distilled H_2O
BROKEN

Effect of Osmotic Pressure on Red Blood Cells

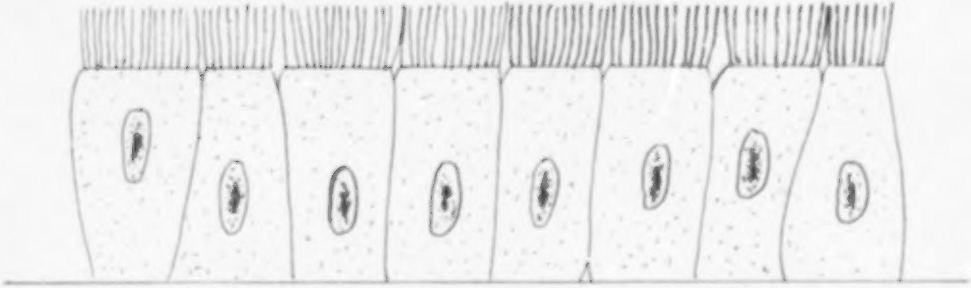
Epithelial Tissues



SIMPLE SQUAMOUS EPITHELIUM



SIMPLE SQUAMOUS EPITHELIUM (Surface View)



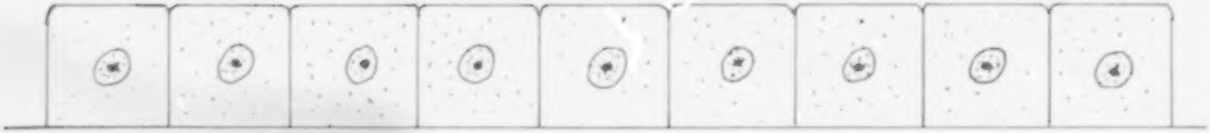
CILIATED COLUMNAR EPITHELIUM

TM 3

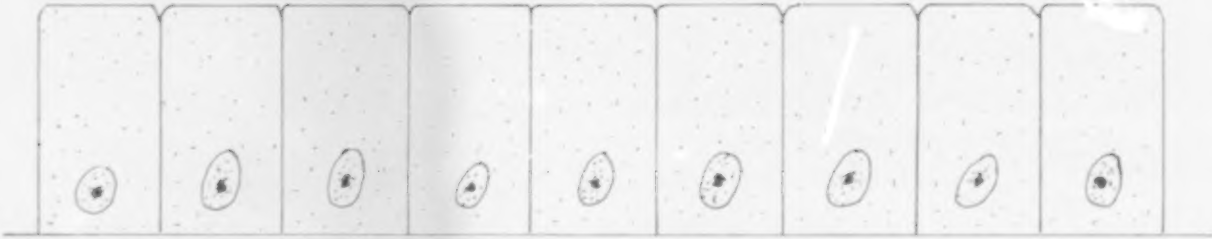
N. I. 37-C

Epithelial Tissues

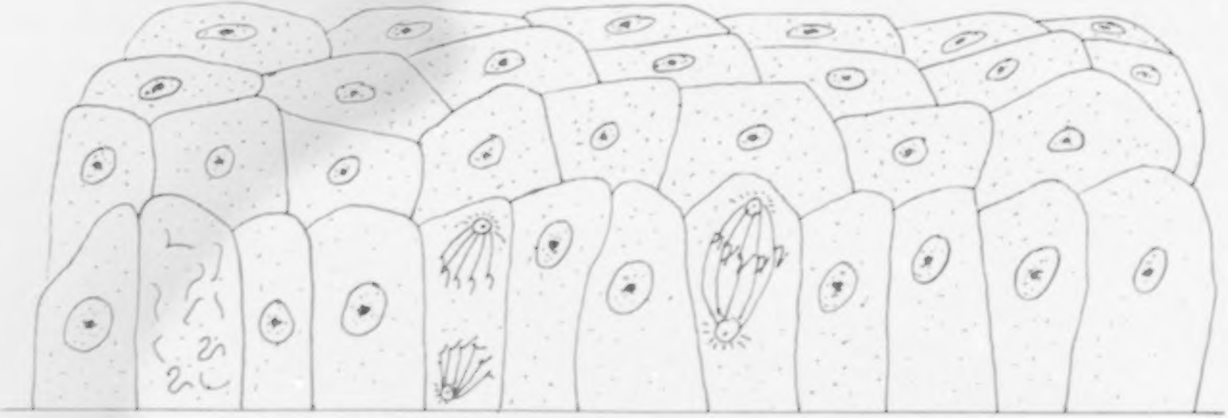
(Continued)



SIMPLE CUBOIDAL EPITHELIUM

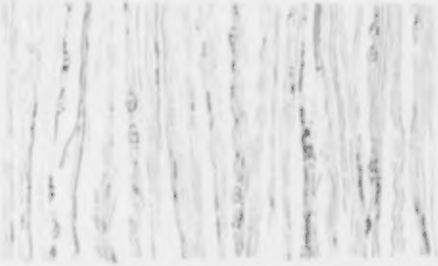


SIMPLE COLUMNAR EPITHELIUM

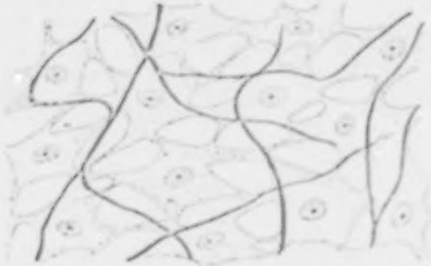


STRATIFIED SQUAMOUS EPITHELIUM

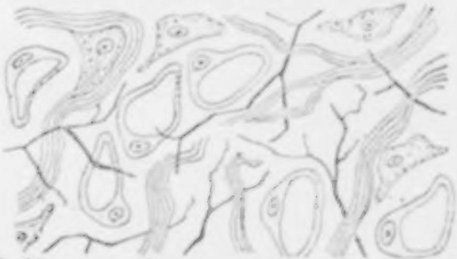
Connective Tissues



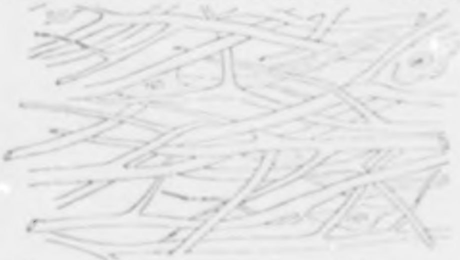
Fibrous Connective Tissue



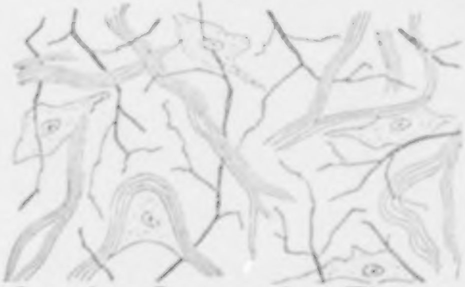
Reticular Connective Tissue



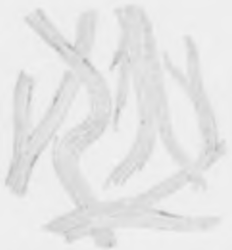
Adipose Connective Tissue



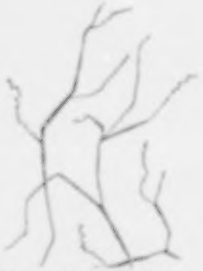
Elastic Connective Tissue



Areolar Connective Tissue

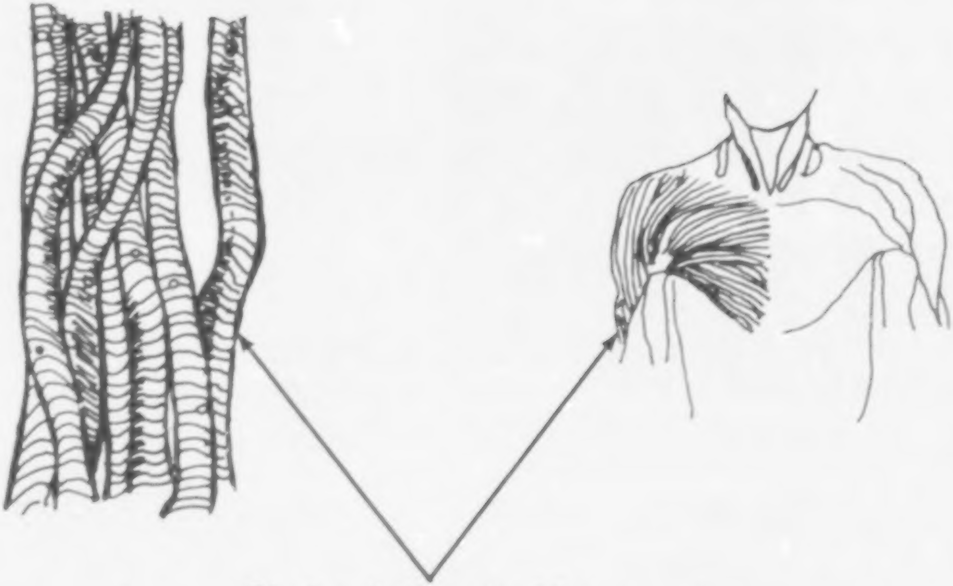


Collagenous Fibers

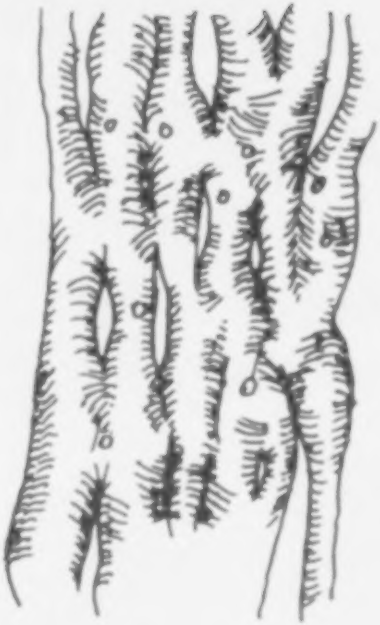


Elastic Fibers

Voluntary Muscle


Skeletal Muscle Tissue

Cardiac Muscle

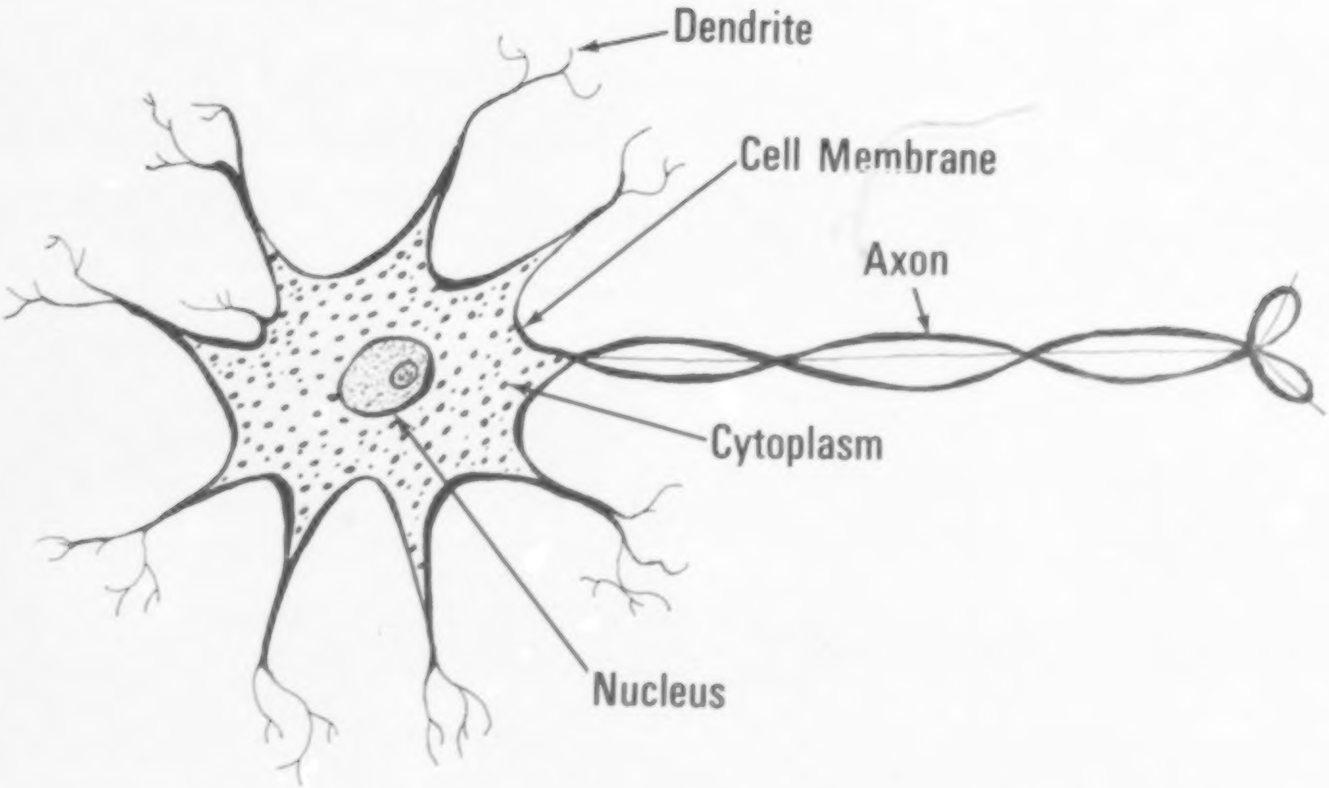


Cardiac Muscle Tissue

The Heart

N. I - 47-C

Nerve Cell


Dendrite
Cell Membrane
Axon
Cytoplasm
Nucleus

BASIC CONCEPTS OF THE LIFE SCIENCES
UNIT II

ASSIGNMENT SHEET #1--MOVEMENTS OF MATERIALS

1. Fill a glass partially full of water. Use a rubber band to fasten a piece of dialysis tubing or animal membrane over the bottom of a funnel. Pour brown table syrup into the funnel. Set the funnel in the glass. The bottom of the funnel should be below the level of the water. Observe the two solutions. What happened to them? Why? What is this movement called?

2. Drop a tablet of dye, such as Easter egg dye, in one glass of water and a drop of food coloring in another glass of water. Which glass of water became evenly colored in the shortest length of time? Why? What is this movement called?

3. Prepare a mixture of dirt in water. Line a strainer, such as a tea strainer, with a piece of tissue or paper towel. Pour the dirt and water mixture through the lined strainer. What happened? Is the water clear or cloudy after it passes through the tissue? Why? What is this movement called?

(NOTE: Dialysis tubing and animal membrane discs are available from the Carolina Biological Supply Company, Burlington, North Carolina 27215.

Membrane discs catalog #	68-4030	per 12 discs	$3.60
Dialysis tubing			
flat width 1 3/4"	68-4222	10 ft. roll	$1.00
flat width 3"	68-4232	10 ft. roll	$2.40.)

BASIC CONCEPTS OF THE LIFE SCIENCES
UNIT II

ANSWERS TO ASSIGNMENT SHEET #1

1. Water will pass through the tubing or membrane into the funnel to equalize the concentration on each side; osmosis
2. The food coloring (liquid) will move throughout the water more quickly than the solid tablet will dissolve because the liquid is in a solvent state; diffusion
3. The water will run through the tissue leaving the dirt in the tissue. If the water is cloudy, it indicates either that some particles of the dirt dissolved and were able to pass through the tissue or the spaces in the tissue were too large and the smaller particles were able to pass through; filtration

BASIC CONCEPTS OF THE LIFE SCIENCES
UNIT II

TEST

1. Match the terms on the right to the correct definition.

______a. Permitting passage of only certain molecules

______b. Striped; marked by streaks

______c. Substance which increases the rate of a chemical reaction without being permanently altered itself

______d. Study of minute living organisms

______e. Study of life

______f. State of chemical balance between the cell and its environment

______g. Study of the microscopic structure of tissues

______h. Plain; lacking stripes or striae

______i. Ability to change its form or shape

______j. The skin

______k. Complex compounds are changed into simpler ones with the release of energy

______l. Pertaining to the internal organs

______m. Ability to adjust to a limited extent to changes in the environment

______n. Ability to convey an impulse

______o. Simple compounds are changed into more complex ones with the use of energy

1. Cell
2. Tissue
3. Osmosis
4. Striated
5. Biology
6. Protoplasm
7. Smooth
8. Anabolism
9. Irritability
10. Integumentary system
11. Anatomy
12. Catalyst
13. Homeostasis
14. Diffusion
15. Catabolism
16. Contractility
17. Visceral
18. Physiology
19. Enzyme
20. Histology
21. Phagocytosis
22. Molecule
23. Cytology

______p. Sum total of the physical and chemical processes and reactions taking place within an organism

______q. Ability to respond to a stimulus

______r. Study of structure

______s. Part of the protoplasm outside the nucleus

______t. Organic catalyst produced by living cells

______u. Ingestion and digestion of a particular substance, such as bacteria or dust, by a cell

______v. Passage of a solvent through a semi-permeable membrane into a more concentrated solution

______w. Smallest unit into which a substance may be divided without losing its characteristics

______x. Continual movement and intermingling of molecules in liquids, gases, or solids

______y. Group of like cells joined together to perform a specific function

______z. Liquid in which another substance is dissolved

____aa. Study of cells

____bb. Smallest unit of living matter

____cc. Living material in all cells

____dd. Study of function

____ee. Substance that is dissolved in a solution

24. Solute
25. Microbiology
26. Cytoplasm
27. Semi-permeable
28. Metabolism
29. Conductivity
30. Adaptability
31. Solvent

2. Name the six compounds in protoplasm and one function of each.

   a.

   b.

   c.

   d.

   e.

   f.

3. List eight characteristics of protoplasm.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

4. Describe three functions of enzymes.

   a.

   b.

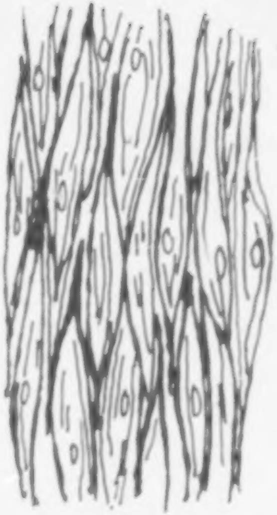
   c.

5. Name the two components of the human body giving the percentage of each.

   a.

   b.

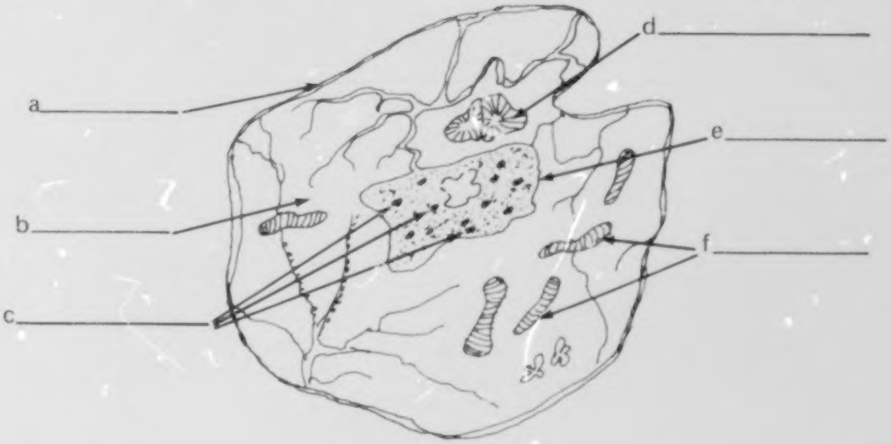
Involuntary Muscle



Visceral Muscle Tissue

Small Intestine

6. Label the parts of this cell.



7. Describe methods of movement of materials through cell membranes.

   a. Physiologic or active transport

      1)

      2)

   b. Physical or passive transport

      1)

      2)

      3)

8. Differentiate between physiological and non-physiological solutions.

9. Describe the four kinds of tissues.

a.

b.

c.

d.

10. Describe three kinds of membranes.

a.

b.

c.

11. List the ten major organ systems.

a.
b.
c.
d.
e.
f.
g.
h.
i.
j.

BASIC CONCEPTS OF THE LIFE SCIENCES
UNIT II

ANSWERS TO TEST

1. a. 27
   b. 4
   c. 12
   d. 25
   e. 5
   f. 13
   g. 20
   h. 7
   i. 16
   j. 10
   k. 15
   l. 17
   m. 30
   n. 29
   o. 8
   p. 28
   q. 9
   r. 11
   s. 26
   t. 19
   u. 21
   v. 3
   w. 22
   x. 14
   y. 2

z. 31

aa. 23

bb. 1

cc. 6

dd. 18

ee. 24

2. a. Water--Acts as the solvent in all cell chemistry

   b. Proteins--Form the structural framework

   c. Carbohydrates--Provide energy

   d. Fats--Provide energy

   e. Nucleic acids--Control growth and reproduction

   f. Mineral salts--Act as buffers in acid-base balance, maintain fluid and electrolyte balance, and aid in structure of the body

3. Any eight of the following

   a. Organization

   b. Growth

   c. Reproduction

   d. Adaptability

   e. Irritability

   f. Contractility

   g. Excretion

   h. Secretion

   i. Conductivity

   j. Metabolism

4. Description should include:

   a. In cells, enzymes act as a catalyst speeding chemical reactions

   b. In digestive tract, enzymes break food down into simpler forms that can be used by cells

   c. Each enzyme will act only upon a certain substance or group of closely related substances

5. a. Solids--40%
   b. Liquids--60%
6. a. Cell membrane
   b. Cytoplasm
   c. Chromatin granules or material
   d. Centrosome
   e. Nucleus
   f. Mitochondria
7. Description should include:
   a. Physiologic or active transport
      1) Requires energy from the cell
      2) Cell wraps itself around a foreign particle
   b. Physical or passive transport
      1) Diffusion--Particles move to equalize concentration throughout
      2) Filtration--Particles move through a filter or membrane that prevents passage of certain molecules
      3) Osmosis--Solvent molecules pass through a semi-permeable membrane to equalize concentration on each side
8. a. Physiological--Isotonic or normal solution--A 0.9% salt solution in which red blood cells normally exist; the same concentration of salt is present in the red cell and the surrounding fluid
   b. Non-physiological--Concentration of salt in the surrounding fluid differs from that in the red cell
      1) Hypertonic solution--If the solution outside the cell has a higher concentration of salt than 0.9%, osmosis takes place and water is drawn out of the cell; the cell shrinks and is destroyed
      2) Hypotonic solution--If the solution outside the cell has a lower concentration of salt than 0.9%, osmosis takes place and water is drawn into the cell; the cell expands and may rupture
9. Description should include:
   a. Epithelial
      1. Cells are close together
      2. Provides covering for surfaces inside and outside the body

3. Functions include protection of other tissues, secretion, and excretion

b. Connective

1) Many varieties

2) May be thin and fragile or tough and strong

3) Protects, supports, and binds the body together

c. Muscle

1) Voluntary, striated, skeletal muscles move the body

2) Involuntary, smooth, visceral muscles control internal functions

3) Cardiac, striated, involuntary muscles

d. Nerve--Conducts or carries messages

10. Description should include:

a. Mucous membranes--Secrete mucus and protect the walls of passageways that open to the outside of the body

b. Serous membranes--Secrete serous fluids which lubricate surfaces of inner organs

c. Cutaneous membrane--Covers and protects the body

11. a. Integumentary

b. Skeletal

c. Muscular

d. Digestive

e. Reproductive

f. Urinary

g. Circulatory

h. Respiratory

i. Nervous

j. Endocrine

POINTS OF REFERENCE FOR THE STUDY OF BODY SYSTEMS
UNIT III

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to match terms and definitions associated with this unit. The student should be able to locate cavities, regions, and directions on given diagrams, name abdominopelvic quadrants, and describe anatomic planes. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with points of reference to the correct definition.
2. Locate the body cavities on a diagram of the body.
3. List organs found in each cavity.
4. Name the abdominopelvic quadrants.
5. Locate the abdominopelvic regions on a diagram.
6. Identify directional terms on a diagram of the body.
7. Describe the anatomic planes.

POINTS OF REFERENCE FOR THE STUDY OF BODY SYSTEMS
UNIT III

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Make transparencies.

   D. Discuss terminal and specific objectives.

   E. Discuss information sheet.

   F. Locate the points of reference on a mannikin or one of the students in the class.

   G. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Locate the points of reference as indicated by your teacher.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1--Anatomical Position

      2. TM 2-Body Cavities - Side View

      3. TM 3--Quadrants of the Abdominopelvic Area

4. TM 4--Regions of the Abdominopelvic Area
5. TM 5--Directions
6. TM 6--Directions (Continued)
7. TM 7--Planes

D. Test

E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1969.

B. Thomas, Virginia E. *Life Sciences for Health Technologists.* Los Angeles, California: Technicourse, Inc., 1970.

POINTS OF REFFRENCE FOR THE STUDY OF BODY SYSTEMS
UNIT III

INFORMATION SHEET

I. Terms and definitions

  A. Anatomical position-Body standing erect, arms at the side with the palms facing forward (Transparency 1)

  B. Thorax--Chest

  C. Abdomen--Portion of the body between the thorax and the pelvis

  D. Pelvis--Lowest part of the trunk

  E. Cranium--Skeleton of the head

  F. Retroperitoneal--Behind the peritoneum

  G. Plane--A specified level either horizontal or vertical

II. Body cavities (Transparency 2)

  A. Dorsal

    1. Cranial

    2. Spinal

  B. Ventral

    1. Thoracic

    2. Abdominal

    3. Pelvic

III. Organs in each cavity

  A. Cranial

    1. Brain

    2. Pituitary gland

  B. Spinal--Spinal cord

  C. Thoracic

    1. Lungs

    2. Heart

    3. Thymus

INFORMATION SHEET

   4. Trachea
   5. Bronchi
   6. Esophagus

D. Abdominal and pelvic (Peritoneal)
   1. Stomach
   2. Liver
   3. Gallbladder
   4. Spleen
   5. Pancreas
   6. Small and large intestine

E. Retroperitoneal
   1. Kidneys
   2. Ureters
   3. Adrenal glands

IV. Quadrants of the abdominopelvic area (Transparency 3)
   A. Upper right quadrant
   B. Upper left quadrant
   C. Lower right quadrant
   D. Lower left quadrant

V. Regions of the abdominopelvic area (Transparency 4)
   A. Right hypochondrium
   B. Epigastrium
   C. Left hypochondrium
   D. Right lumbar
   E. Umbilical
   F. Left lumbar
   G. Right inguinal
   H. Suprapubic
   I. Left inguinal

INFORMATION SHEET

VI. Directional terms

- A. Medial--Near the midline (Transparency 5)
- B. Lateral--Toward the side
- C. Posterior--Toward the back
- D. Anterior--Toward the front
- E. Superior--Above
- F. Inferior--Below
- G. Central--Pertaining to the center (Transparency 6)
- H. Peripheral--Pertaining to the outward part
- I. Cranial--Near the head
- J. Caudal--Near the lower end of the spine
- K. Proximal--Nearest the origin of a structure
- L. Distal--Farthest from the origin of a structure

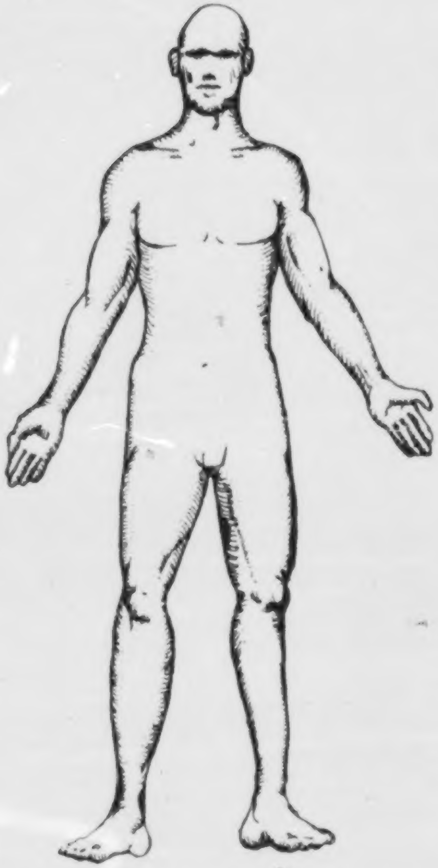
VII. Anatomic planes (Transparency 7)

- A. Sagittal--An imaginary line from head to foot dividing the body into a right and left part
- B. Frontal or coronal--Divides the body into anterior or ventral and posterior or dorsal parts
- C. Transverse--Divides the body into superior and inferior parts

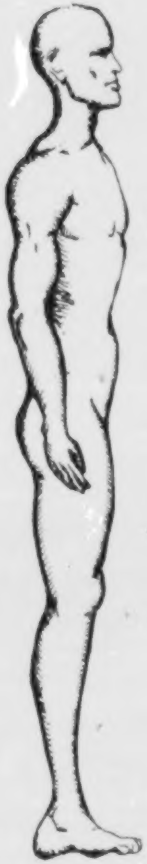
  (NOTE: Transverse line can be located at any level on the body.)

Anatomical Position

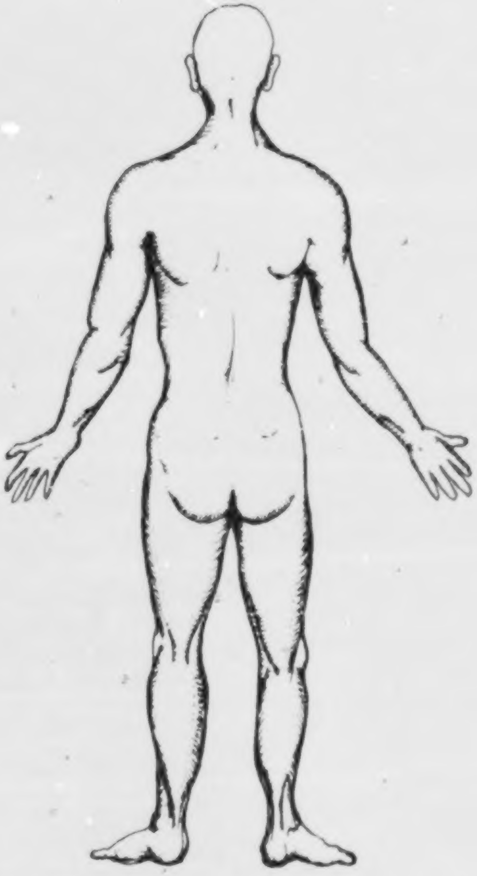
VIEWS



Anterior or Ventral



Lateral



Posterior or Dorsal

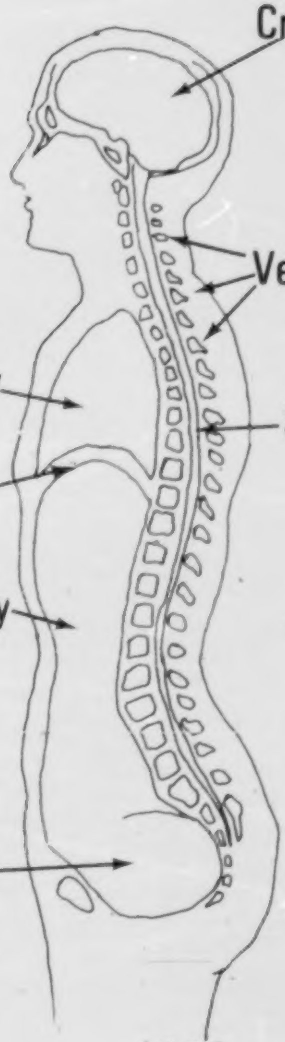
680

681

TM 1

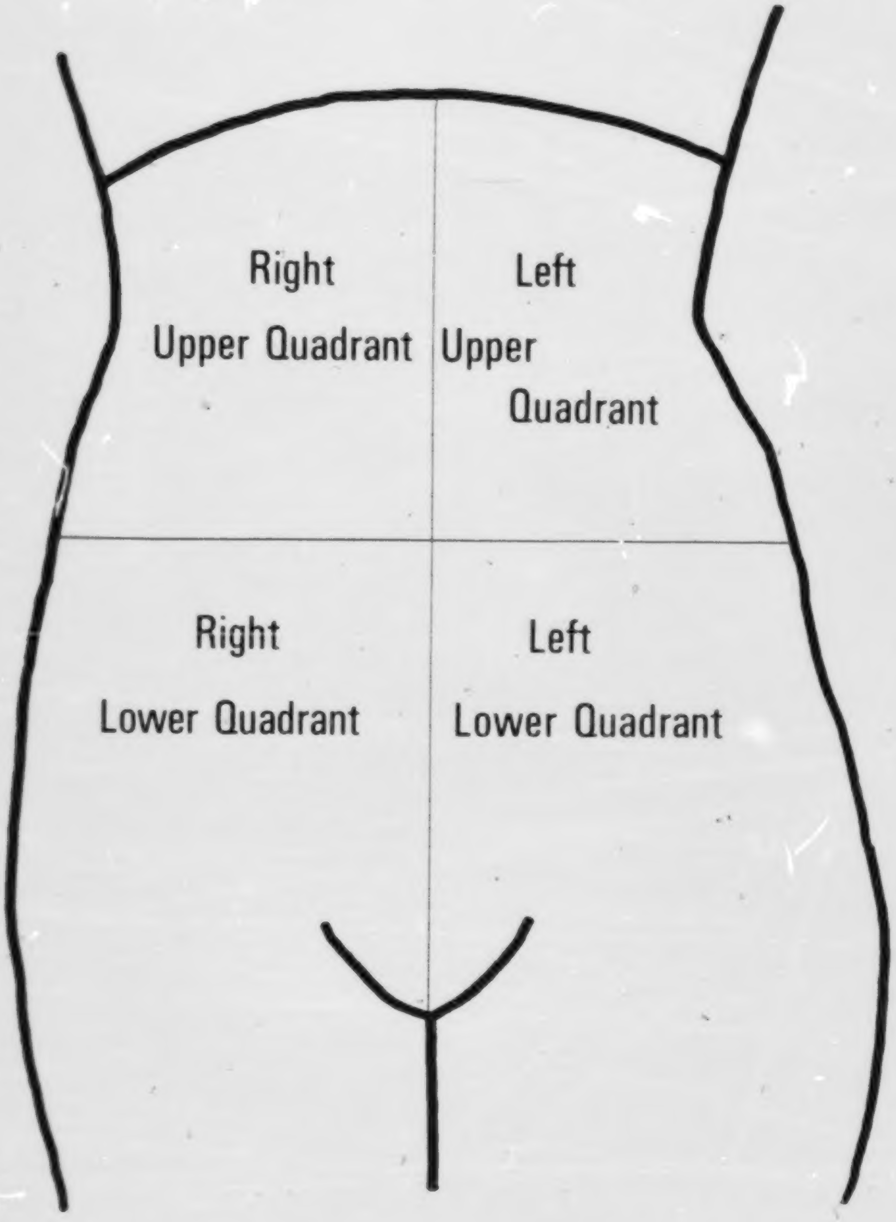
N. I - 73-C

Body Cavities-Side View

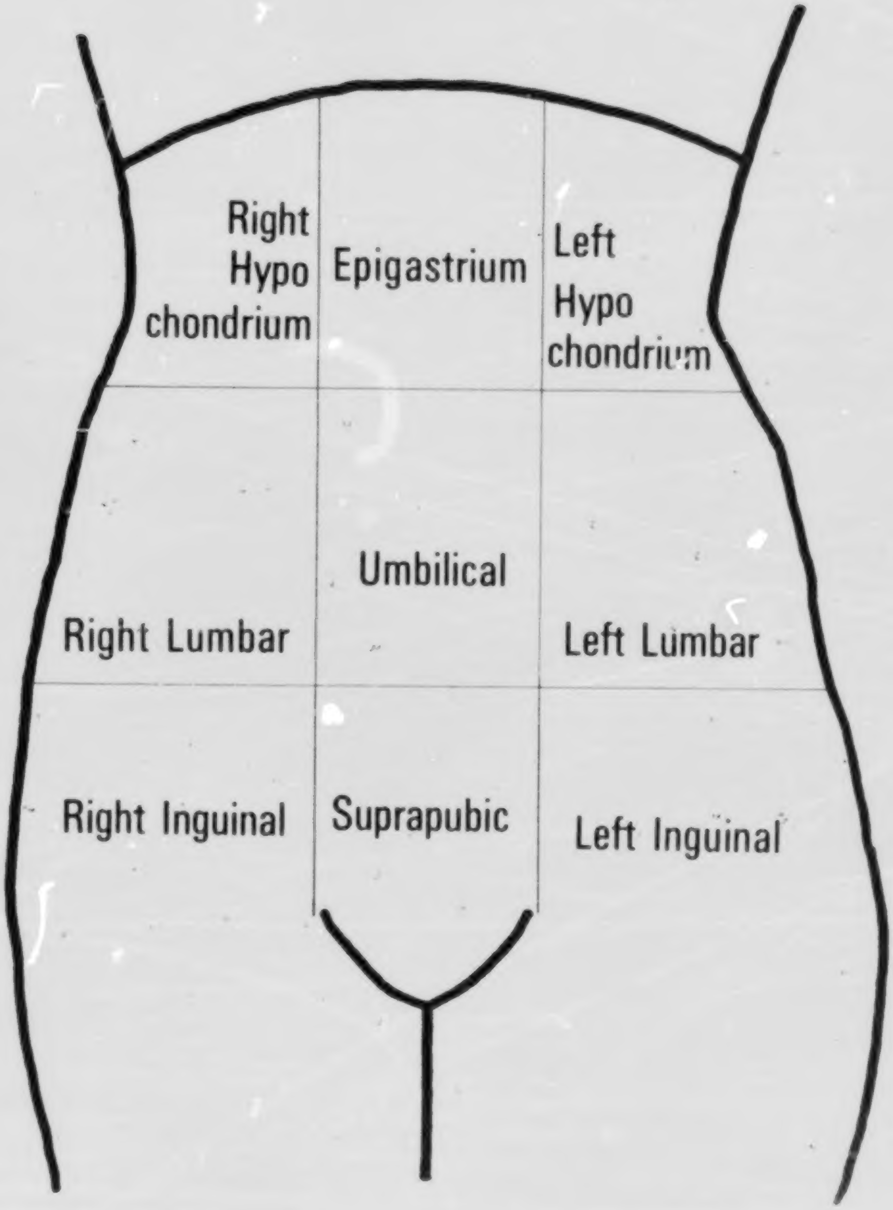

Cranial Cavity
VENTRAL
DORSAL
Vertebrae
Thoracic Cavity
Spinal Cavity
Diaphragm
Abdominal Cavity
Pelvic Cavity

N. I - 75-C

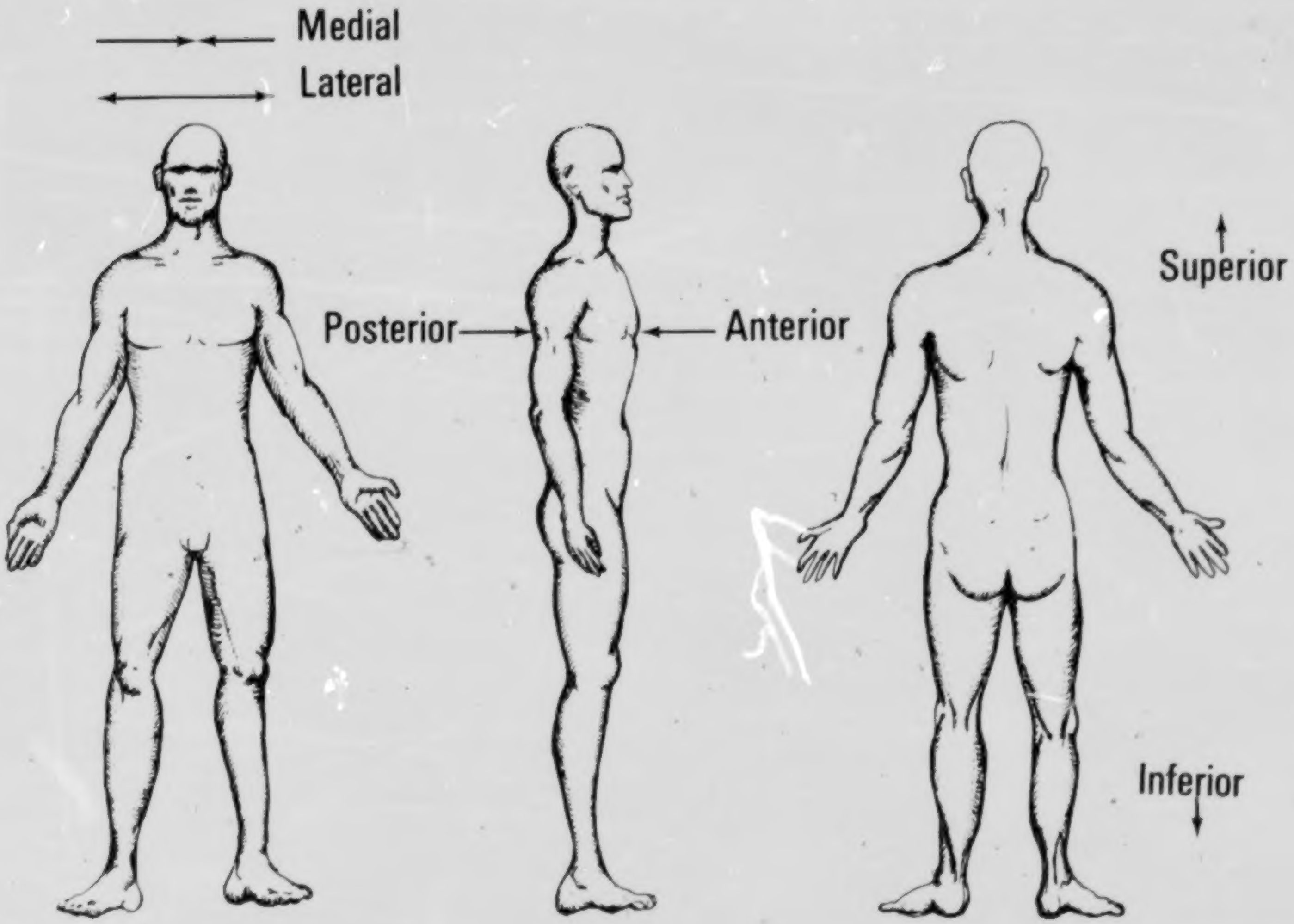
Quadrants of the Abdominopelvic Area


Right
Upper Quadrant
Left
Upper
Quadrant
Right
Lower Quadrant
Left
Lower Quadrant

Regions of the Abdominopelvic Area

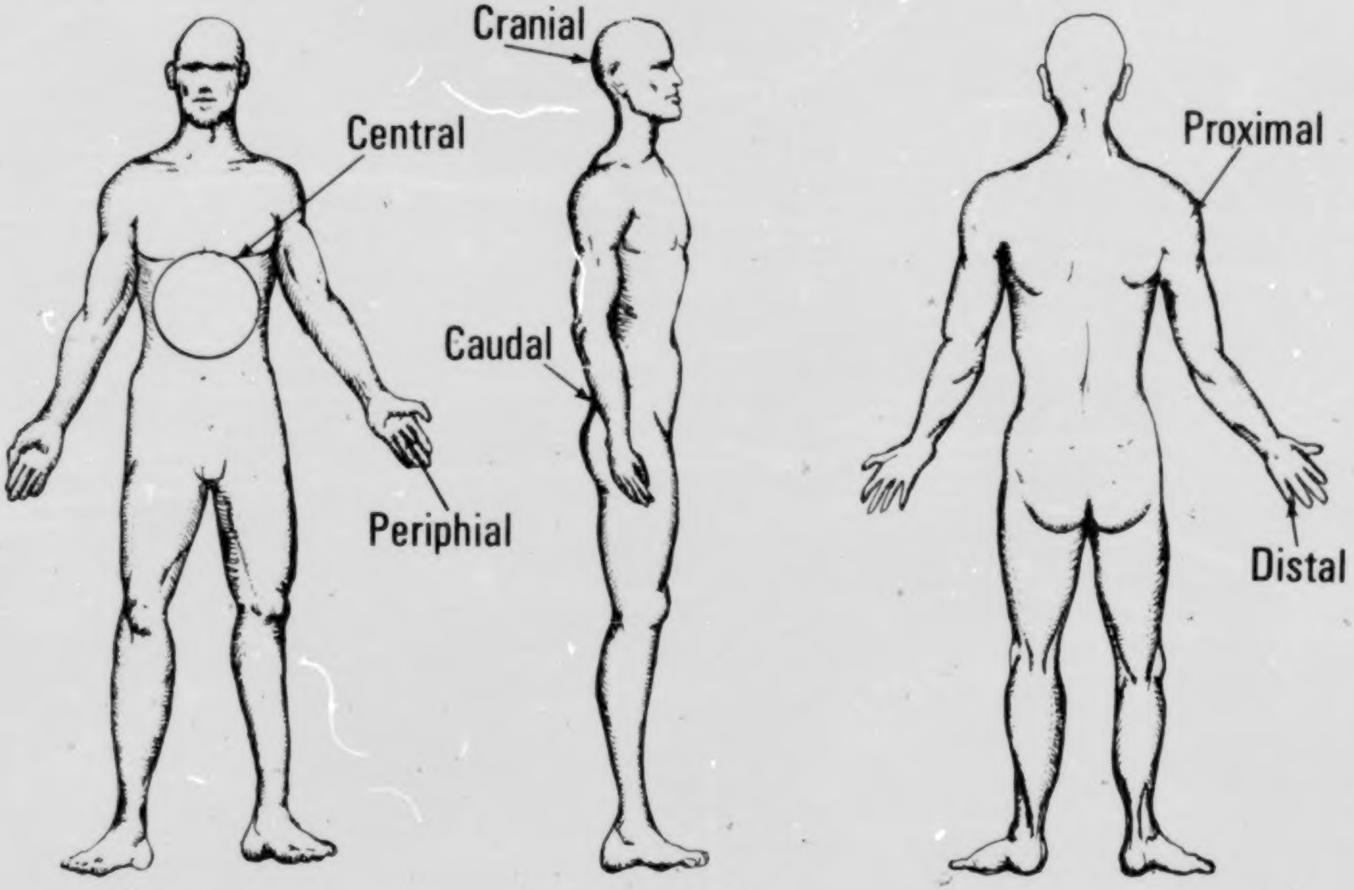

Right Hypo chondrium
Epigastrium
Left Hypo chondrium
Right Lumbar
Umbilical
Left Lumbar
Right Inguinal
Suprapubic
Left Inguinal

Directions

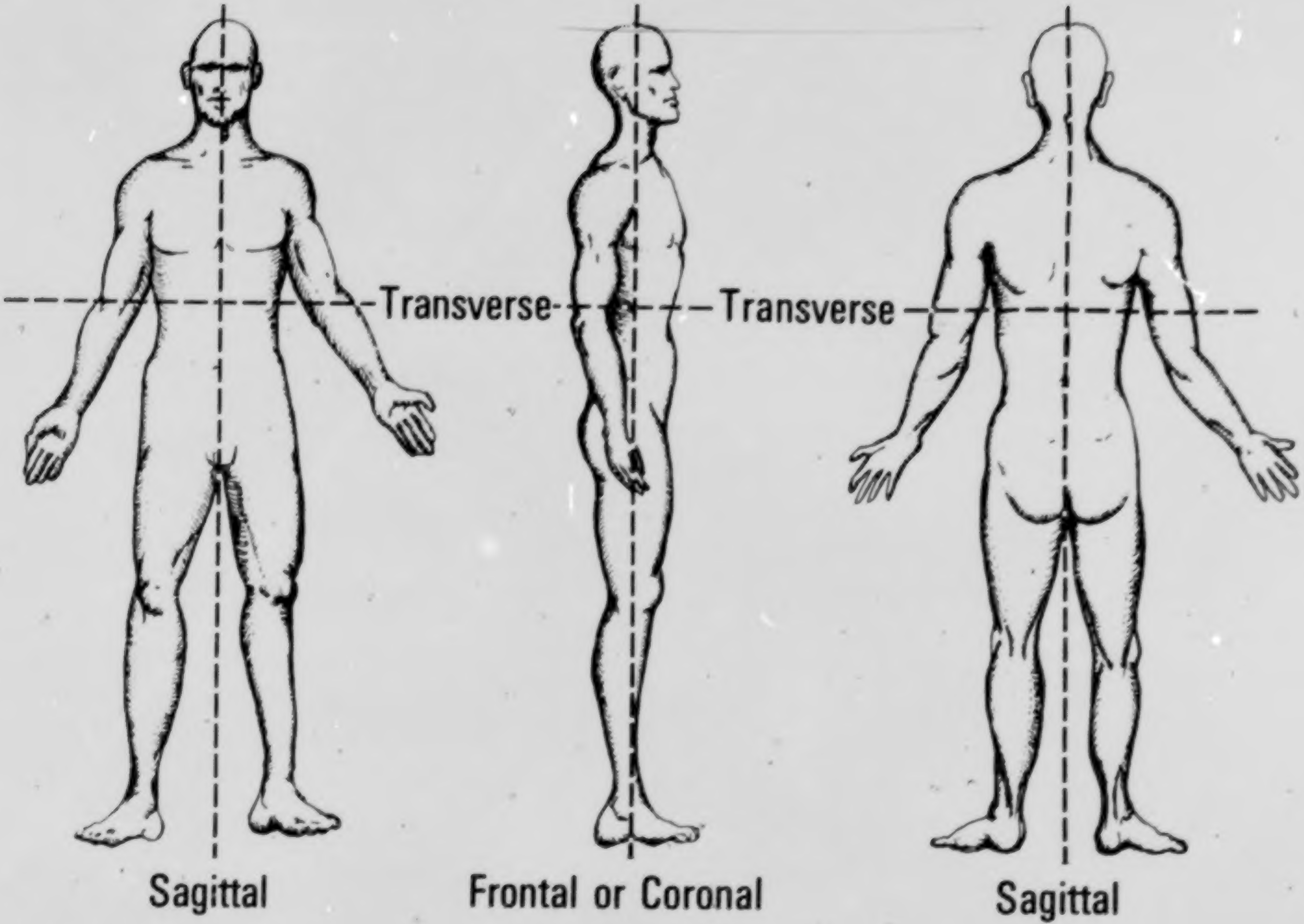

Medial
Lateral
Posterior
Anterior
Superior
Inferior

Directions

(Continued)


Cranial
Central
Proximal
Caudal
Periphial
Distal

Planes


Transverse
Transverse
Sagittal
Frontal or Coronal
Sagittal

TM 7

N. I - 85-C

POINTS OF REFERENCE FOR THE STUDY OF BODY SYSTEMS
UNIT III

TEST

1. Match the terms on the right to the correct definition.

_____a. Chest

_____b. Behind the peritoneum

_____c. Lowest part of the trunk

_____d. Portion of the body between the thorax and the pelvis

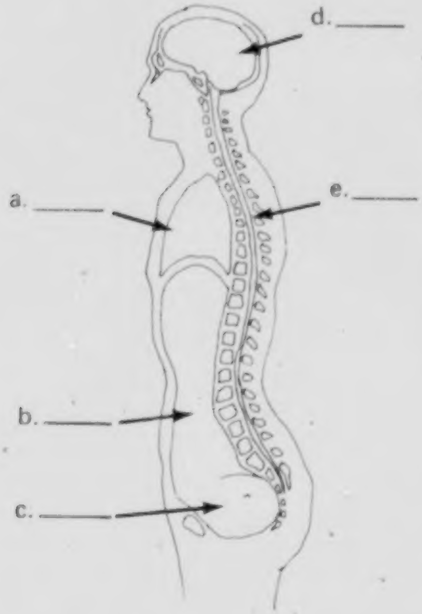
_____e. Skeleton of the head

_____f. A specified level either horizontal or vertical

_____g. Body standing erect, arms at the side with the palms facing forward

1. Plane
2. Cranium
3. Abdomen
4. Anatomical position
5. Thorax
6. Pelvis
7. Retroperitoneal

2. Locate the body cavities on the diagram by writing the correct number in the blanks.



1. Cranial
2. Pelvic
3. Spinal
4. Thoracic
5. Abdominal

3. List at least one organ found in each cavity.

a.

b.

c.

d.

e.

4. Name the abdominopelvic quadrants.

a.

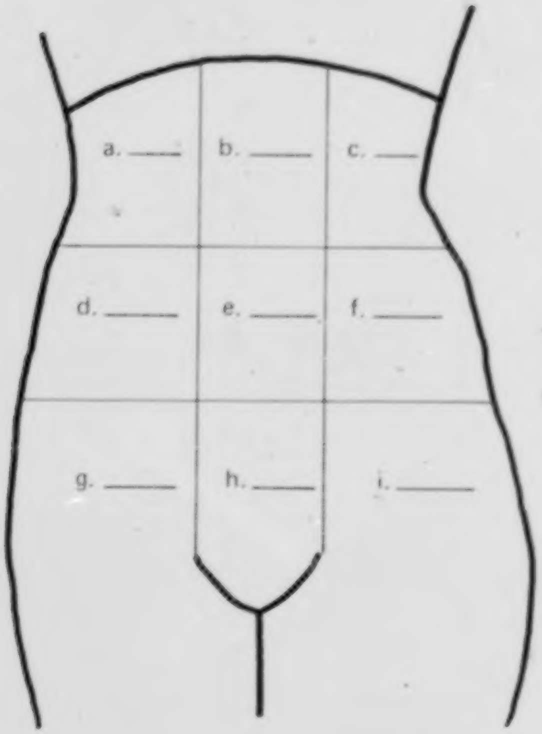
b.

c.

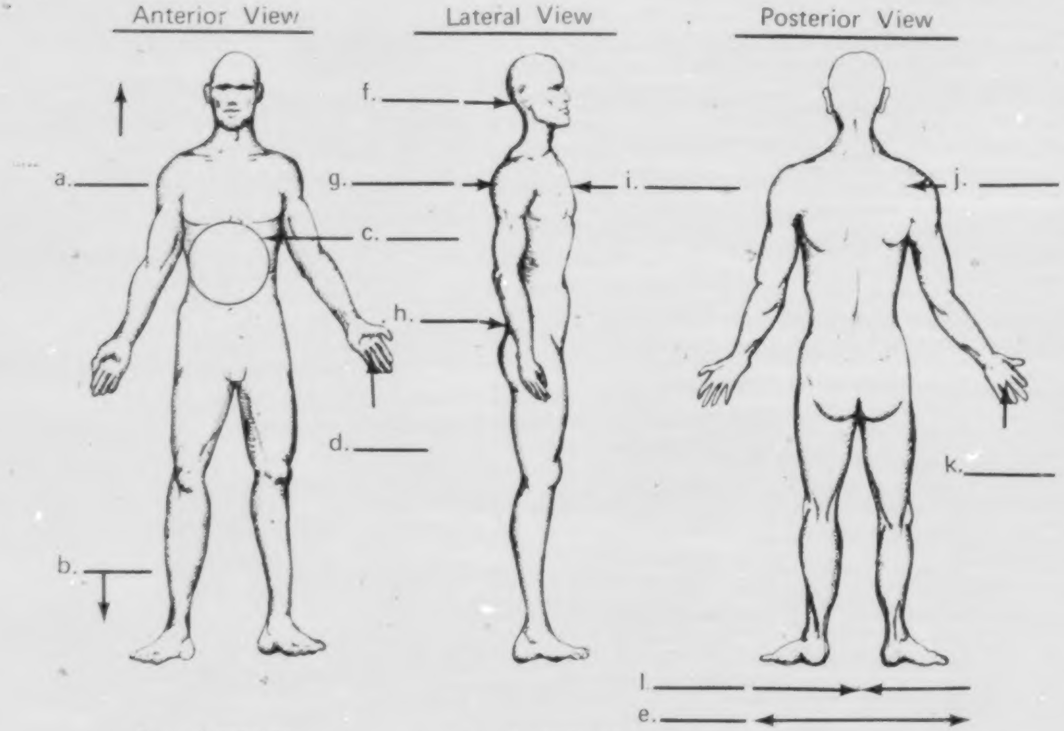
d.

5. Locate the abdominopelvic regions on this diagram by writing the correct number in the appropriate area.

1. Right hypochondrium	6. Umbilical
2. Right lumbar	7. Epigastrium
3. Suprapubic	8. Right inguinal
4. Left inguinal	9. Left hypochondrium
5. Left lumbar	



6. Identify the following directional terms by writing the correct number in the blanks.


Anterior View
Lateral View
Posterior View
f.
a.
g.
i.
j.
c.
h.
d.
k.
b.
l.
e.

1. Anterior
2. Caudal
3. Central
4. Cranial
5. Distal
6. Inferior
7. Lateral
8. Medial
9. Peripheral
10. Posterior
11. Proximal
12. Superior

7. Describe the anatomic planes.

a. Sagittal

b. Frontal or coronal

c. Transverse

POINTS OF REFERENCE FOR THE STUDY OF BODY SYSTEMS
UNIT III

ANSWERS TO TEST

1. a. 5
   b. 7
   c. 6
   d. 3
   e. 2
   f. 1
   g. 4

2. a. 4
   b. 5
   c. 2
   d. 1
   e. 3

3. List should include one of the following for each cavity.
   a. Cranial
      1) Brain
      2) Pituitary gland
   b. Spinal--Spinal cord
   c. Thoracic
      1) Lungs
      2) Heart
      3) Thymus
      4) Trachea
      5) Bronchi
      6) Esophagus

- d. Abdominal and pelvic
  - 1) Stomach
  - 2) Liver
  - 3) Gallbladder
  - 4) Spleen
  - 5) Pancreas
  - 6) Small and large intestine
- e. Retroperitoneal
  - 1) Kidneys
  - 2) Ureters
  - 3) Adrenal glands

4. The abdominopelvic quadrants
   - A. Upper right quadrant
   - B. Upper left quadrant
   - C. Lower right quadrant
   - D. Lower left quadrant

5. a. 1
   - b. 7
   - c. 9
   - d. 2
   - e. 6
   - f. 5
   - g. 8
   - h. 3
   - i. 4

6. a. 12
   - b. 6
   - c. 3
   - d. 9

e. 7

f. 4

g. 10

h. 2

i. 1

j. 11

k. 5

l. 8

7. Description should include:

   a. Sagittal--An imaginary line from head to foot dividing the body into a right and left part

   b. Frontal or coronal-Divides the body into anterior or ventral and posterior or dorsal parts

   c. Transverse--Divides the body into superior and inferior parts

THE INTEGUMENTARY SYSTEM
UNIT IV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe the structure and functions of the skin, list the appendages of the skin, and identify parts of the skin on a diagram. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the integumentary system to the definitions.
2. Describe the layers of the skin.
3. List the appendages of the skin.
4. Identify the parts of the skin on a diagram.
5. Discuss the functions of the integument.
6. List six health practices which maintain the integrity of the integumentary system.

THE INTEGUMENTARY SYSTEM
UNIT IV

SUGGESTED ACTIVITIES

I. Instructor:
  - A. Provide students with objective sheet.
  - B. Provide students with information sheet.
  - C. Make transparency.
  - D. Discuss terminal and specific objectives.
  - E. Discuss information sheet.
  - F. Give test.

II. Student:
  - A. Read objectives.
  - B. Study information sheet and transparency.
  - C. Participate in discussion.
  - D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
  - A. Objectives
  - B. Information sheet
  - C. Transparency master: TM 1--The Skin
  - D. Test
  - E. Answers to test

II. References:
  - A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1969.
  - B. Jacob, Stanley W. and Clarice A. Francone. *Structure and Function in Man.* Philadelphia, W.B. Saunders Company, 1965.
  - C. Thomas, Virginia E. *Life Sciences for Health Technologics.* Los Angeles, California: Technicourse Inc., 1970.

THE INTEGUMENTARY SYSTEM
UNIT IV

INFORMATION SHEET

I. Terms and definitions

   A. Dermatology--Study of the skin

   B. Stratified--Arranged in layers

   C. Squamous--Covered with or consisting of scales

   D. Epithelium--Outer layer of cells of the skin

   E. Regeneration--Repair, regrowth, or restoration of a part

   F. Integument--Skin or covering including sweat and oil glands

   G. Appendage--Anything attached to a larger or major part

   H. Cutaneous--Pertaining to the skin

II. Layers of the skin

   A. Epidermis

      1. Structure--Covering for the body

         (NOTE: There are about 3,000 square inches of surface on the average adult.)

      2. Composition

         a. Stratified squamous epithelial cells

         b. Thickest on palms and soles

      4. Functions of inner layer

         a. Forms new cells

            (NOTE: Skin can be regenerated only as long as the inner layer remains intact.)

         b. Contains pigment or melanin

   B. Dermis

      1. Lies directly below the epidermis

         (NOTE: The dermis is referred to as the true skin.)

      2. Structure--Connective tissue framework

INFORMATION SHEET

3. Contains blood vessels, nerves, lymph vessels, hair follicles, and sweat glands

C. Subcutaneous or superficial fascia

1. Composed of elastic and fibrous tissues and deposits of fat

2. Attaches the dermis to the underlying structures

III. Appendages of the skin

A. Hair

(NOTE: Hair is modified dead epidermal tissue.)

B. Nails

(NOTE: Nails are horny cutaneous plates.)

C. Sebaceous glands

(NOTE: Function is to secrete oil.)

D. Sudoriferous or sweat glands

(NOTE: Function is to secrete body salts, waste products, and water.)

E. Ceruminous glands in ears

(NOTE: Function is to secrete wax.)

IV. Parts of the skin (Transparency 1)

A. Epidermis

B. Dermis (corium)

C. Subcutaneous tissue (fascia)

D. Sudoriferous gland (sweat)

E. Sebaceous gland (oil)

E. Hair follicle

G. Cutaneous nerve endings

H. Pore (sweat duct opening)

I. Growing layer

INFORMATION SHEET

- J. Blood vessel
- K. Fibrous connective tissue
- L. Adipose cells (fat)

V. Functions of the integument

- A. Sensation
  - 1. Basic sensations
    - a. Pain
    - b. Temperature
    - c. Touch
    - d. Pressure
  - 2. Permit body to adjust to environmental changes
- B. Protection
  - 1. Forms an elastic covering for protection against the external environment
  - 2. Prevents excessive loss of fluids and electrolytes
  - 3. Prevents invasion of microorganisms
  - 4. Repels water
- C. Regulation of body temperature
  - 1. Evaporation of perspiration cools the skin
  - 2. Adjustment of size of blood vessels increases or decreases heat loss
  - 3. Fatty tissue acts as insulation to prevent heat loss
- D. Excretion of water, salt, and waste products on a limited basis
- E. Formation of Vitamin D when exposed to sun or ultraviolet light
- F. Secretion of oil to maintain elasticity and water-resistance

VI. Practices which maintain the integrity of the integumentary system

- A. Cleanliness of the body including hair, nails, and teeth
- B. Six to eight glasses of water daily

INFORMATION SHEET

C. Sleep as necessary for your age group

D. Diet in recommended amounts of four basic food groups with special emphasis on foods containing vitamins A, C, and D

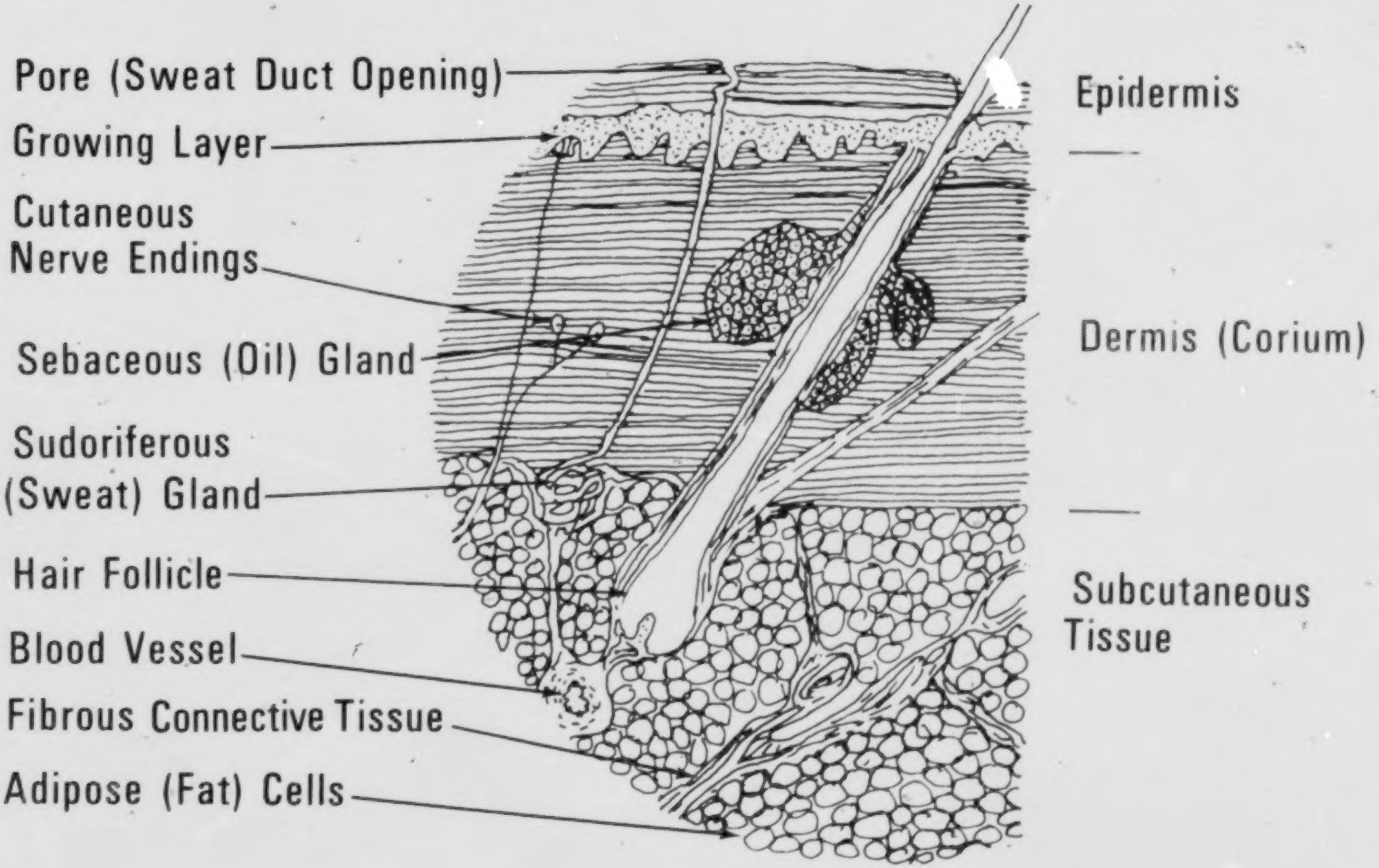
E. Fresh air and sunshine regularly

F. Regular exercise and physical activity

G. Regular elimination

H. Prompt care of cuts, abrasions, rashes, or other breaks in the skin

The Skin


Pore (Sweat Duct Opening)
Growing Layer
Cutaneous Nerve Endings
Sebaceous (Oil) Gland
Sudoriferous (Sweat) Gland
Hair Follicle
Blood Vessel
Fibrous Connective Tissue
Adipose (Fat) Cells
Epidermis
Dermis (Corium)
Subcutaneous Tissue

THE INTEGUMENTARY SYSTEM
UNIT IV

TEST

1. Match the terms on the right to the correct definition.

_____a. Outer layer of cells of the skin

_____b. Arranged in layers

_____c. Study of the skin

_____d. Skin or covering including sweat and oil glands

_____e. Covered with or consisting of scales

_____f. Pertaining to the skin

_____g. Repair, regrowth, or restoration of a part

_____h. Anything attached to a larger or major part

1. Stratified
2. Squamous
3. Integument
4. Epithelium
5. Dermatology
6. Appendage
7. Regeneration
8. Cutaneous

2. Describe the layers of the skin.

a. Epidermis

b. Dermis

c. Subcutaneous or superficial fascia

3. List the appendages of the skin.

   a.

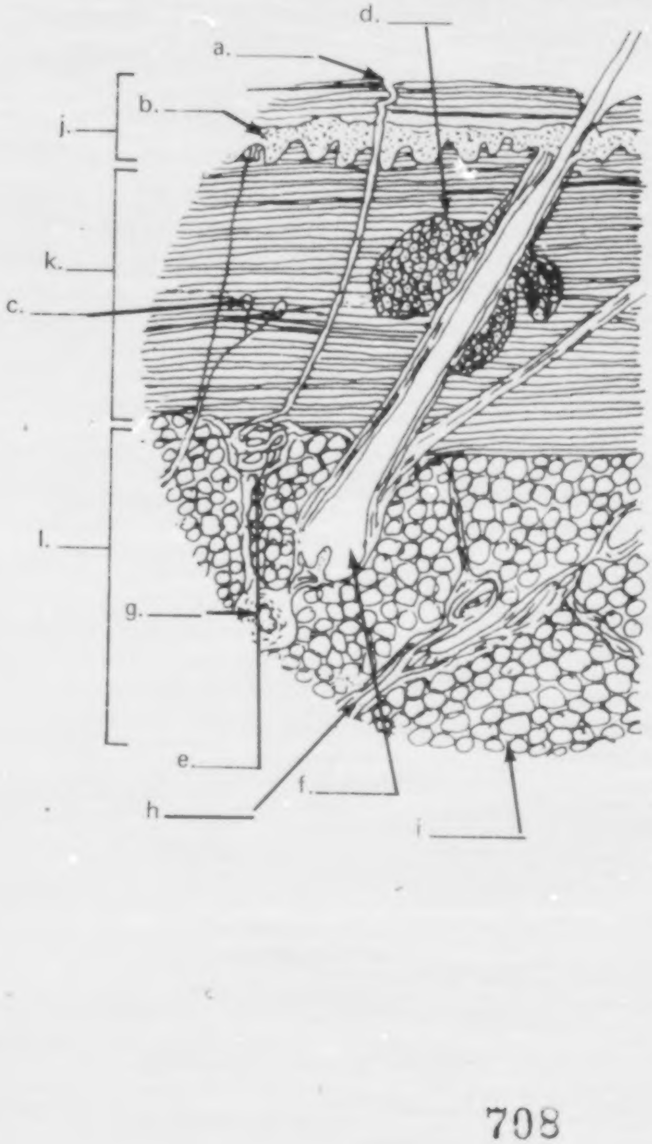
   b.

   c.

   d.

   e.

4. Identify the parts of the skin by writing the correct number in the blanks.



1. Blood vessel
2. Epidermis
3. Adipose cells (fat)
4. Subcutaneous tissue (fascia)
5. Pore (sweat duct opening
6. Fibrous connective tissue
7. Dermis (corium)
8. Cutaneous nerve endings
9. Hair follicle
10. Sebaceous gland (oil)
11. Growing layer
12. Sudoriferous gland (sweat)

5. Discuss the functions of the integument.

6. List six health practices which maintain the integrity of the integumentary system.

a.

b.

c.

d.

e.

f.

THE INTEGUMENTARY SYSTEM
UNIT IV

ANSWERS TO TEST

1. a. 4
   b. 1
   c. 5
   d. 3
   e. 2
   f. 8
   g. 7
   h. 6
2. Description should include:
   a. Epidermis
      1) Structure--Covering for the body
      2) Composition
         a) Stratified squamous epithelial cells
         b) Thickest on palms and soles
      3) Functions of inner layer
         a) Forms new cells
         b) Contains pigment or melanin
   b. Dermis
      1) Lies directly below the epidermis
      2) Structure--Connective tissue framework
      3) Contains blood vessels, nerves, lymph vessels, hair follicles, and sweat glands
   c. Subcutaneous or superficial fascia
      1) Composed of elastic and fibrous tissues and deposits of fat
      2) Attaches the dermis to the underlying structure

3. a. Hair
   b. Nails
   c. Sebaceous glands
   d. Sudoriferous or sweat glands
   e. Ceruminous glands in ears

4. a. 5
   b. 11
   c. 8
   d. 10
   e. 12
   f. 9
   g. 1
   h. 6
   i. 3
   j. 2
   k. 7
   l. 4

5. Discussion should include:
   a. Sensation
      1) Basic sensations
         a) Pain
         b) Temperature
         c) Touch
         d) Pressure
      2) Permit body to adjust to environmental changes
   b. Protection
      1) Forms an elastic covering for protection against the external environment

    2) Prevents excessive loss of fluids and electrolytes
    3) Prevents invasion of microorganisms
    4) Repels water

  c. Regulation of body temperature

    1) Evaporation of perspiration cools the skin
    2) Adjustment of size of blood vessels increases and decreases heat loss
    3) Fatty tissue acts as insulation to prevent heat loss

  d. Excretion of water, salt, and waste products on a limited basis

  e. Formation of Vitamin D when exposed to sun or ultraviolet light

  f. Secretion of oil to maintain elasticity and water-resistance

6. Any six of the following:

  a. Cleanliness of the body including hair, nails, and teeth

  b. Six to eight glasses of water daily

  c. Sleep as necessary for your age group

  d. Diet in recommended amounts of four basic food groups with special emphasis on foods containing vitamins A, C, and D

  e. Fresh air and sunshine regularly

  f. Regular exercise and physical activity

  g. Regular elimination

  h. Prompt care of cuts, abrasions, rashes, or other breaks in the skin

THE SKELETAL SYSTEM
UNIT V

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list functions of the skeletal system, components and types of bones, and classifications of joints. The student should be able to describe skeletons, identify bones of the skeletal system, and discuss bone growth. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the skeletal system to the definitions.
2. List five functions of the skeletal system.
3. List three components of bones.
4. Label the parts of a long bone.
5. Select five types of bones from a list.
6. List six bone markings.
7. Describe the axial and appendicular skeletons.
8. List three classifications of joints according to amount of movement naming one of each type.
9. Describe the four types of freely movable joints.
10. List seven types of movement in joints.
11. Identify the bones of the skeletal system on a given diagram.
12. Describe the growth of bones.
13. Discuss the effects of age and sex on bone growth.
14. Describe the differences in the female and male pelvis.
15. List four health practices to maintain the integrity of the skeletal system.

THE SKELETAL SYSTEM
UNIT V

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information and assignment sheets.

  F. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet and transparencies.

  C. Participate in discussion.

  D. Complete assignment sheet.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency masters

    1. TM 1-Structure of a Long Bone

    2. TM 2-Ball and Socket Joint

    3. TM 3-Hinge Joint

    4. TM 4-Pivot Joint

    5. TM 5-Types of Joint Movement

    6. TM 6-Anterior View of the Skeleton

7. TM 7--Posterior View of the Skeleton

8. TM 8--Female and Male Pelvis

D. Assignment Sheet #1--Identify Bones

E. Test

F. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing*. Philadelphia, Pennsylvania: W.B. Saunders Company, 1969.

B. Dienhart, Charlotte M. *Basic Human Anatomy and Physiology*. Philadelphia, Pennsylvania: W.B. Saunders Company, 1967.

C. Reith, Edward J., Bertha Breidenback, and Mary Lorenc. *Textbook of Anatomy and Physiology*. New York: McGraw-Hill Book Company, 1964.

D. Thomas, Virginia E. *Life Sciences for Health Technologies*. Los Angeles, California: Technicourse Inc., 1970.

THE SKELETAL SYSTEM
UNIT V

INFORMATION SHEET

I. Terms and definitions

A. Bone markings--Openings, hollows, depressions, projections, or processes which serve a specific purpose

B. Condyle--Knob or rounded piece at the end of a bone that helps make a joint

C. Crest--Narrow edge or ridge on a bone

D. Foramen--Hole or opening for passage of blood vessels, nerves, and ligaments

E. Fossa--Depression or hollow, usually to accommodate some other nearby structure

F. Head--Rounded portion beyond the narrow necklike portion of a long bone

G. Sinus--Chamber or cavity in a bone

H. Process--Small rounded bone projection

I. Meatus--Tube-shaped opening

J. Appendage--Anything attached to a larger part, as an arm, leg, or tail; a dependent part

K. Appendicular--Pertaining to a limb or an appendage

L. Medullary cavity--Central space in a long bone

M. Axial--Pertaining to the central part; the skeleton of the head and trunk

N. Osteology--Study of bones

O. Arthrology--Study of joints

P. Articulation--Point where bones are joined together; a joint

Q. Cartilage--White elastic substance attached to bone surfaces at the joints

R. Fontanel--In the fetus and newborn, the membranous site of the future union of two or more bones

S. Trochanter--Very large process on a bone

T. Tuberosity--Large roughened projection

U. Gynecoid--Womanlike; resembling a woman

V. Android--Manlike; resembling a man

INFORMATION SHEET

W. Ligament--Tough, fibrous band binding together bones or supporting internal organs

X. Suture--Line of junction of cranial bones

II. Skeletal system functions

A. Provide shape and support

B. Assist in body movement

C. Protect vital organs

D. Manufacture red blood cells, platelets, and some white cells

E. Store minerals such as calcium and phosphorus

III. Composition of bones

A. Inorganic salts such as calcium phosphate

B. Organic materials such as bone cells, blood vessels, nerves, and cartilage

C. Water

IV. Structures of a bone (Transparency 1)

A. Epiphysis--End of long bone

B. Diaphysis--Center of long bone

C. Periosteum--Exterior covering of bones except in joints

D. Articular cartilage--Covering of bones in joint areas

E. Compact bone--Dense, hard layer of bone tissue just beneath the periosteum

F. Cancellous bone--A layer of spongy bone found inside the compact bone, especially in the epiphysis; contains red marrow which produces red blood cells

G. Medullary cavity--Bone marrow cavity

(NOTE: In childhood it is filled with red marrow. In adults it is filled with yellow marrow, a fatty tissue.)

H. Endosteum--Lining of the medullary cavity

I. Epiphyseal cartilage--A layer of cartilage between the epiphysis and the diaphysis where the growth takes place

INFORMATION SHEET

V. Types of bones

- A. Long--Length is greater than their breadth
    1. Humerus
    2. Radius
    3. Ulna
    4. Femur
    5. Tibia
    6. Fibula
- B. Short--Length and breadth nearly equal
    1. Wrist
    2. Ankle
- C. Flat--Two layers of compact bone separated by a narrow space
    1. Skull
    2. Sternum
    3. Ribs
    4. Shoulder blade
- D. Irregular--Mixed shapes that do not fit in the first three groups
    1. Face
    2. Spinal
    3. Hip
- E. Sesamoid--Develop in tendons--Patella

VI. Bone markings

- A. Condyle
- B. Crest
- C. Foramen
- D. Fossa
- E. Head

INFORMATION SHEET

- F. Sinus
- G. Process
- H. Tuberosity
- I. Meatus
- J. Trochanter

VII. Divisions of the skeleton

- A. Axial skeleton--The bony framework of the head and the trunk (NOTE: This includes eighty bones.)
  - 1. Skull
  - 2. Vertebrae
  - 3. Ribs and sternum
- B. Appendicular skeleton--The framework of the extremities (NOTE: This includes 126 bones.)
  - 1. Upper extremities
  - 2. Lower extremities

VIII. Classifications of joints according to amount of movement

- A. Immovable with no joint cavities (Synarthrosis)
  - 1. Skull sutures
  - 2. Epiphyseal cartilage of the long bones
- B. Slightly movable (Amphiarthrosis)
  - 1. Vertebral discs
  - 2. Symphysis pubis
  - 3. Sacroiliac joints
- C. Freely movable (Diarthrosis; also called synovial joints)
  - 1. Shoulder joints
  - 2. Elbow, wrist, and finger joints
  - 3. Knee and ankle joints

INFORMATION SHEET

IX. Types of freely movable joints

- A. Ball and socket joints (Transparency 2)
  - 1. The head of one bone fits into a cup-like socket of another bone
  - 2. Movement takes place in all planes plus rotation

    Examples: Hip and shoulder joints
- B. Hinge joints (Transparency 3)
  - 1. A spool-shaped surface fits into a concave surface
  - 2. Movement consists of flexion and extension and is limited by structure of the joint and by ligaments

    Examples: Joints of elbows, fingers, knees, and toes
- C. Pivot joints (Transparency 4)
  - 1. An arch-shaped surface surrounds a peg-like pivot
  - 2. Only movement is rotation

    Examples: First vertebra rotates upon the second; radius rotates on the ulna in the elbow
- D. Gliding joints
  - 1. One bony surface glides upon another
  - 2. No angular or rotary movement

    Examples: Intervertebral joints; small bones of wrist and ankle

X. Types of movement in joints (Transparencies 2, 3, 4, and 5)

- A. Flexion
- B. Extension
- C. Abduction
- D. Adduction
- E. Rotation
- F. Supination
- G. Pronation

INFORMATION SHEET

XI. The bones of the skeletal system (Transparencies 6 and 7)

A. Axial skeleton

1. Cranium
2. Cervical vertebrae
3. Thoracic vertebrae
4. Lumbar vertebrae
5. Sacrum
6. Coccyx
7. Sternum
8. Xiphoid process
9. Ribs

B. Appendicular skeleton--Upper extremities

1. Clavicle
2. Scapula
3. Humerus
4. Ulna
5. Radius
6. Carpals
7. Metacarpals
8. Phalanges

C. Appendicular skeleton--Lower extremities

1. Ilium
2. Ischium
3. Pubis
4. Femur

INFORMATION SHEET

5. Patella
6. Tibia
7. Fibula
8. Tarsals
9. Metatarsals
10. Phalanges
11. Calcaneus

XII. Growth of bones

A. At birth, bones are soft cartilage and gradually mature and grow in size

B. As bones mature, calcium phosphate is deposited in the cartilage and long fibers

C. Large amounts of calcium, phosphorus, and Vitamin D are required for bone growth

D. To prevent bones from becoming completely solid, an orderly tearing-down process takes place at all times in the medullary cavity

E. Every bone has an inner space for bone marrow

1. To manufacture blood cells
2. To aid in the nourishment of the bone itself
3. To prevent the bone from being too heavy

XIII. Effects of age and sex on bone growth

A. Noticeable growth takes place until puberty and then slows until the end of adolescence

B. Skeletal maturity is reached at approximately twenty years in the female, twenty-three years in the male

C. From soft bone at birth, bones gradually become harder and in advanced age become brittle and easily broken

D. Female skeleton is lighter and smaller than the male

INFORMATION SHEET

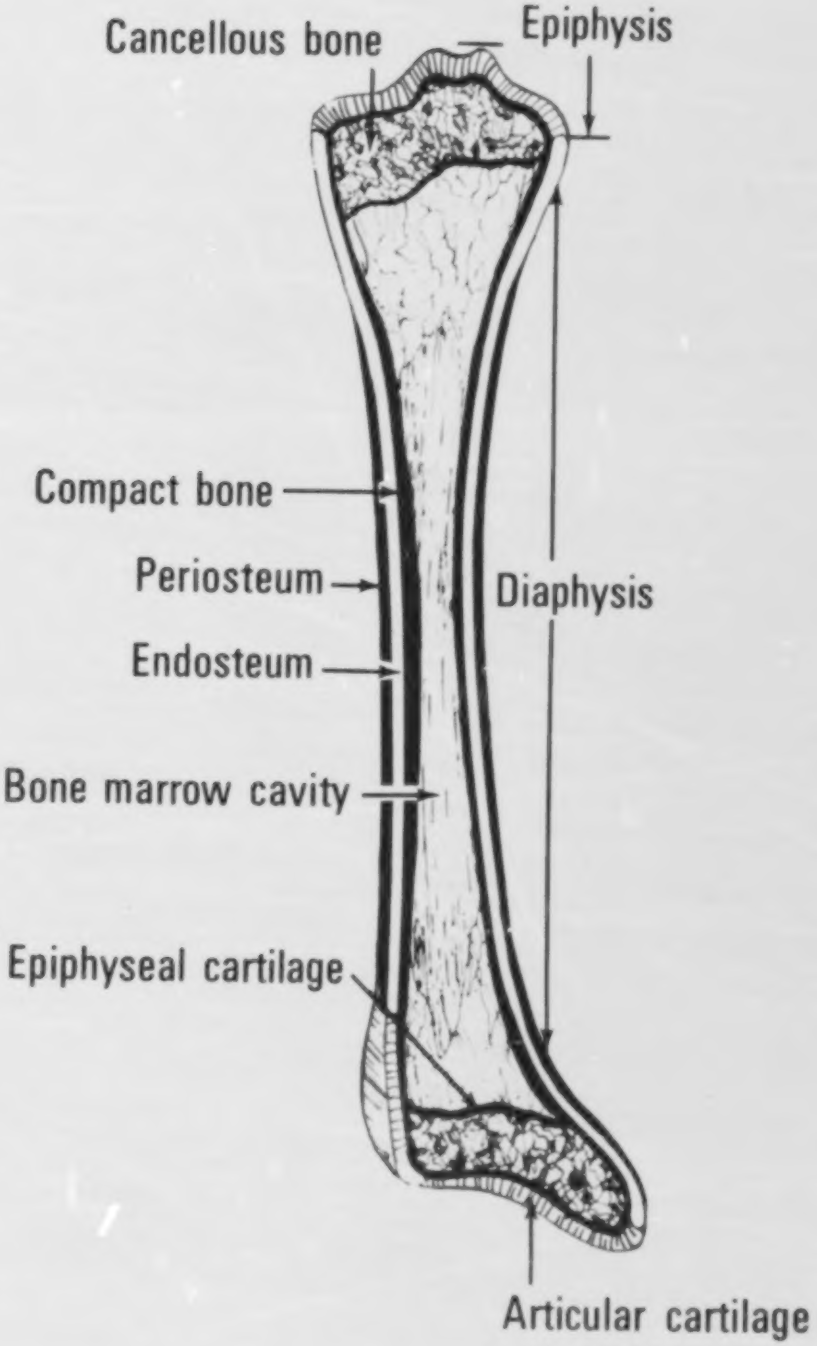
XIV. Differences in female and male pelvis (Transparency 8)

- A. The cavity of a female pelvis is shallower and broader
- B. The inlet and outlet of a female pelvis are larger
- C. The pubic arch of a female pelvis is wider
- D. The bones of a female pelvis are lighter in weight
- E. The female coccyx is more flexible

XV. Maintaining the integrity of the skeletal system

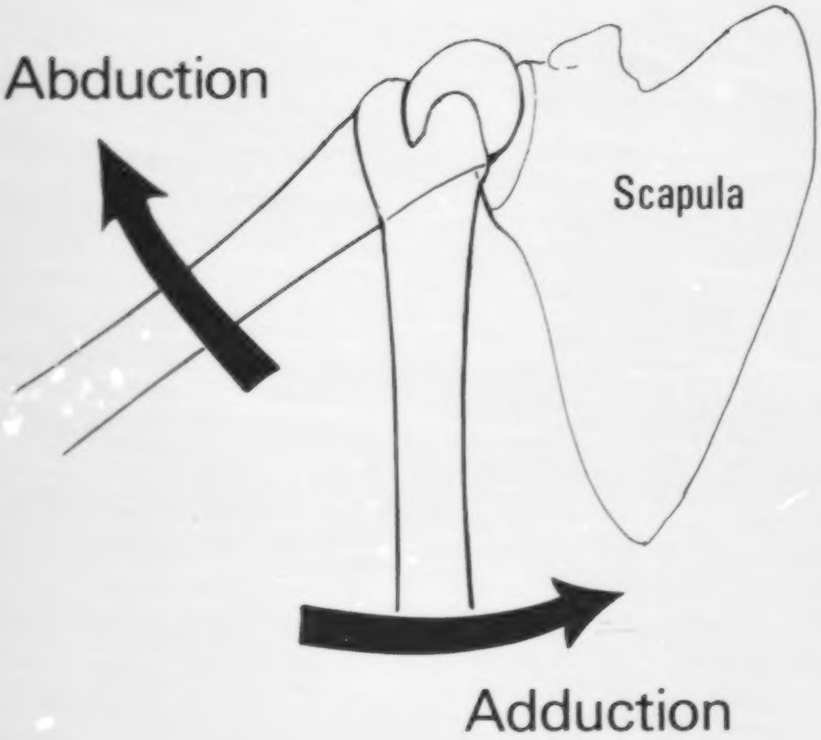
- A. Maintain good posture
- B. Give special attention to foot care
  1. Bathe daily; dry thoroughly
  2. Trim nails straight across
  3. Wear well-fitted shoes; keep in good condition
  4. Wear hose of proper size
- C. Maintain adequate diet for growth and maintenance including Vitamin D, calcium, iron, phosphorus, and protein
- D. Use correct body mechanics
- E. Exercise regularly

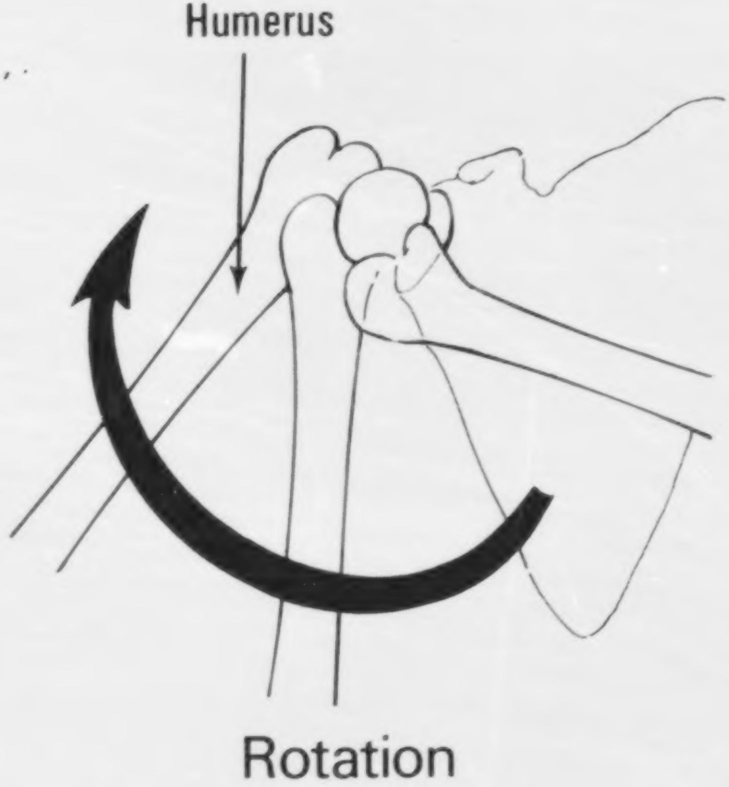
Structure of a Long Bone


Cancellous bone
Epiphysis
Compact bone
Periosteum
Endosteum
Diaphysis
Bone marrow cavity
Epiphyseal cartilage
Articular cartilage

Ball and Socket Joint

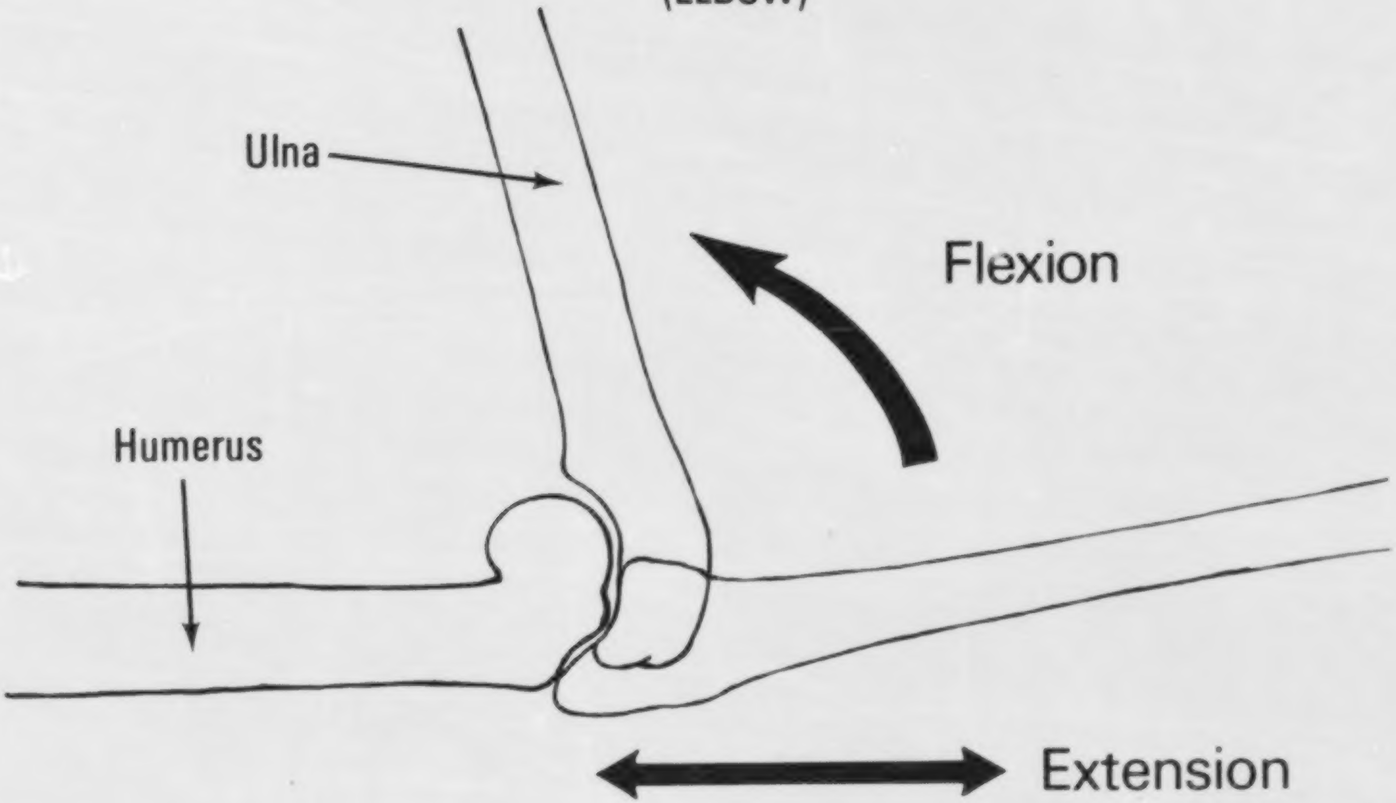
(SHOULDER)


Abduction
Scapula
Adduction


Humerus
Rotation

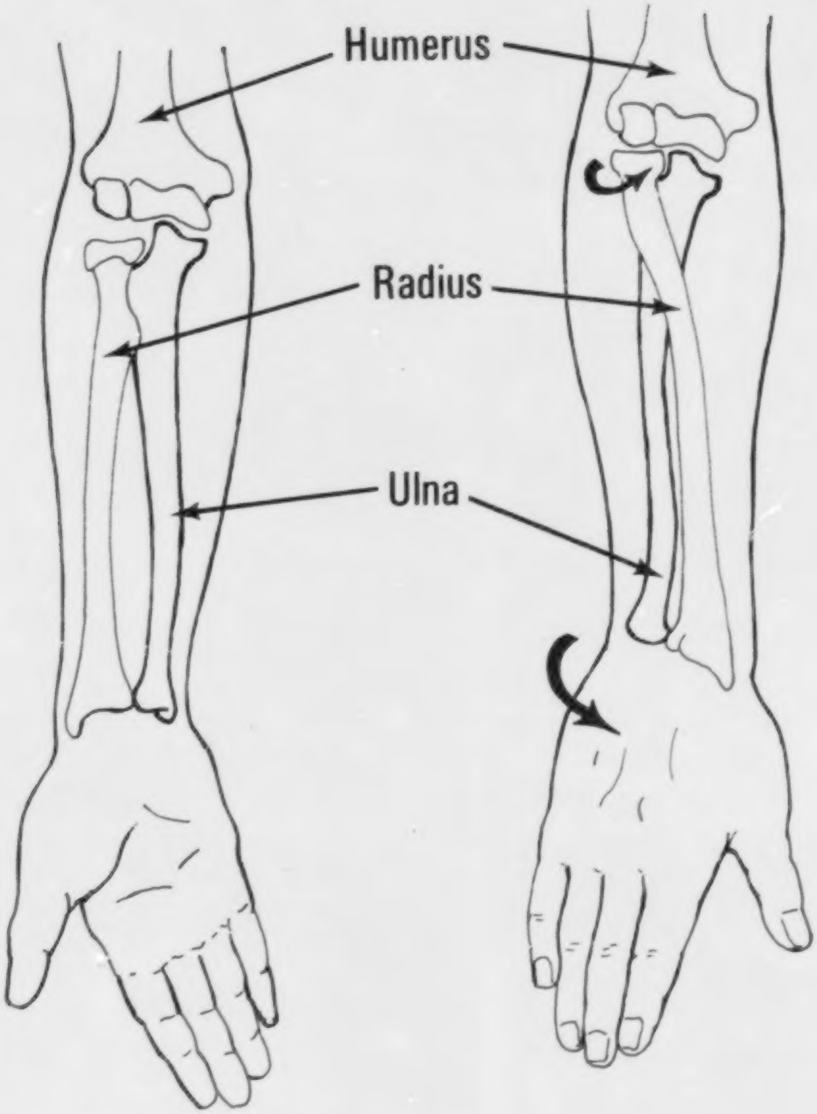
Hinge Joint

(ELBOW)


Ulna
Flexion
Humerus
Extension

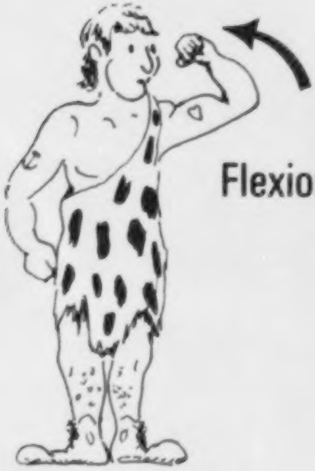
Pivot Joint

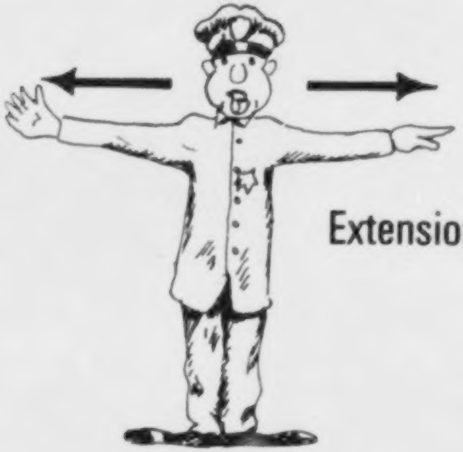
(ELBOW)

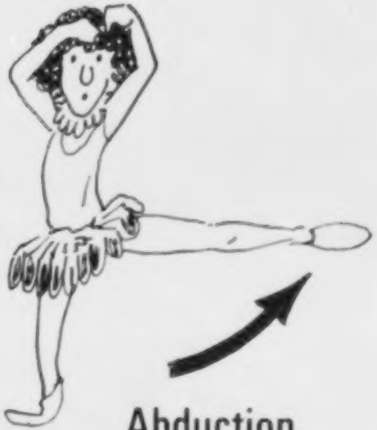

Humerus
Radius
Ulna

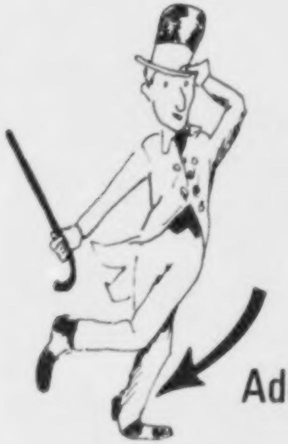
Supination Pronation

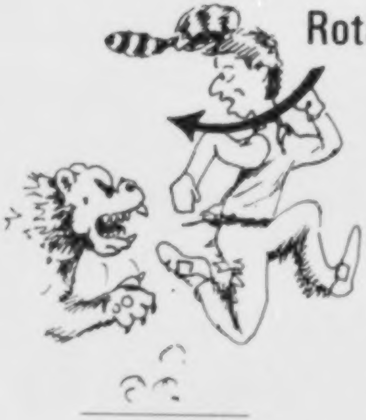
Types of Joint Movement

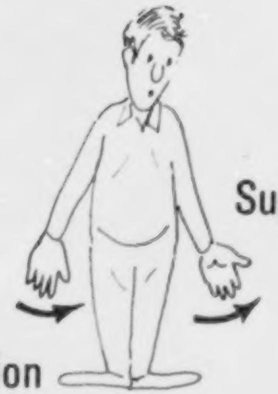

Flexion


Extension


Abduction

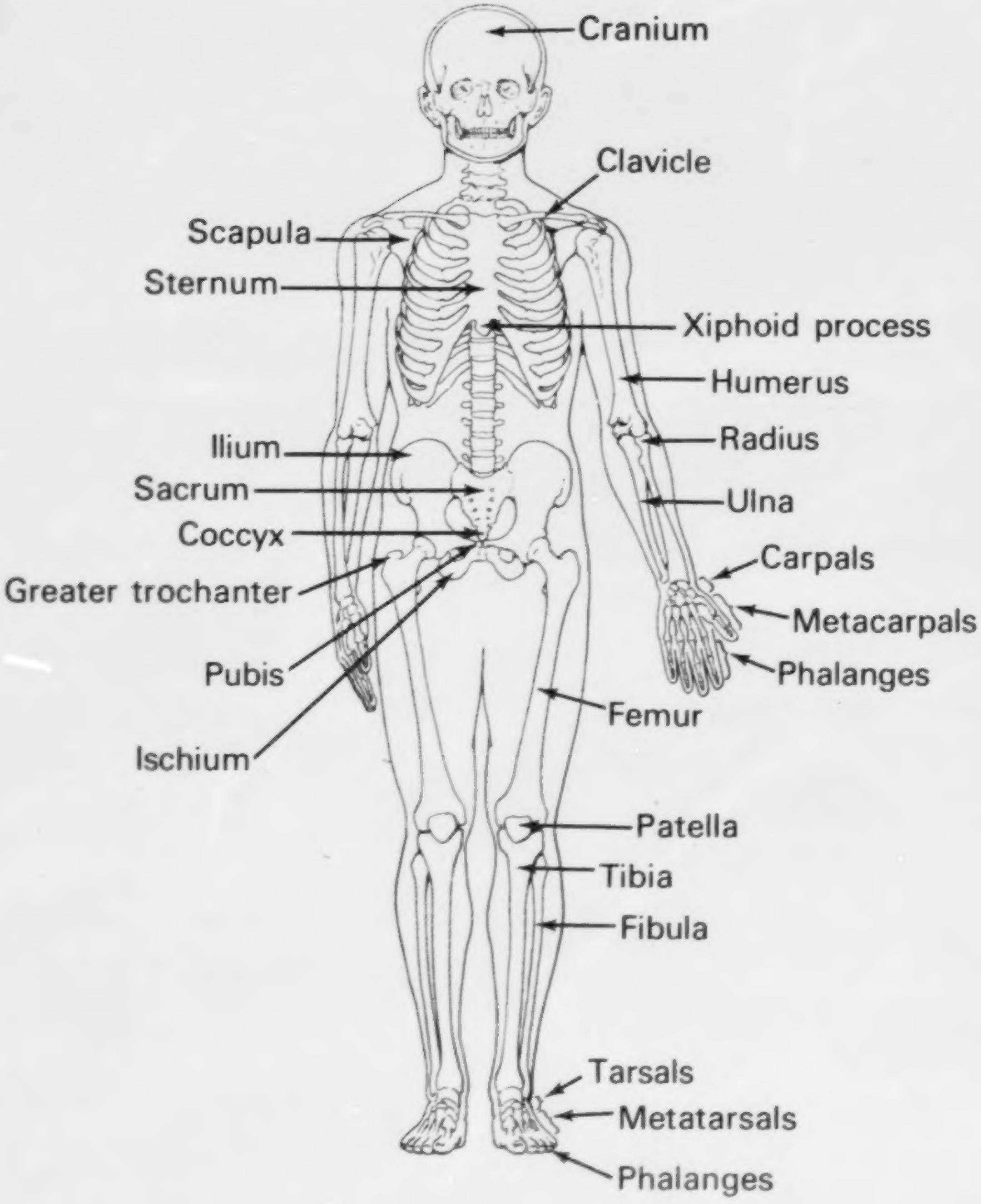

Adduction


Rotation

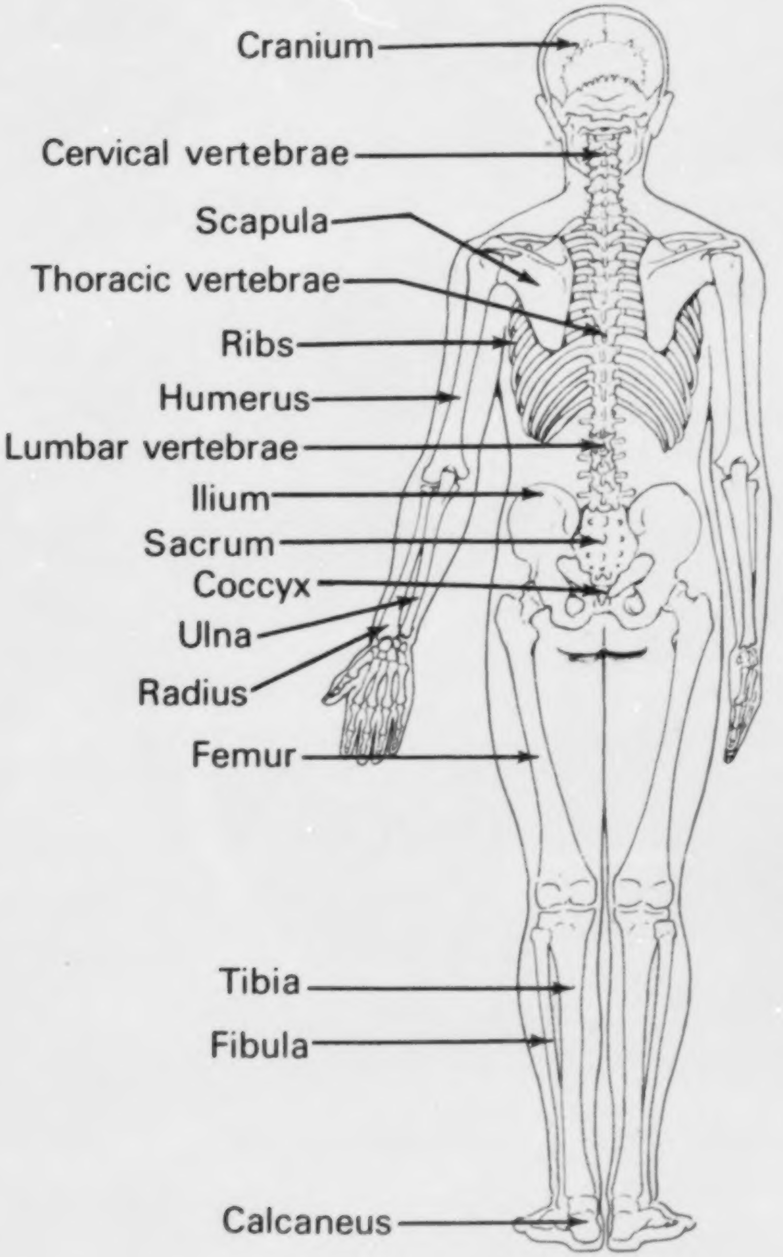

Supination

Pronation

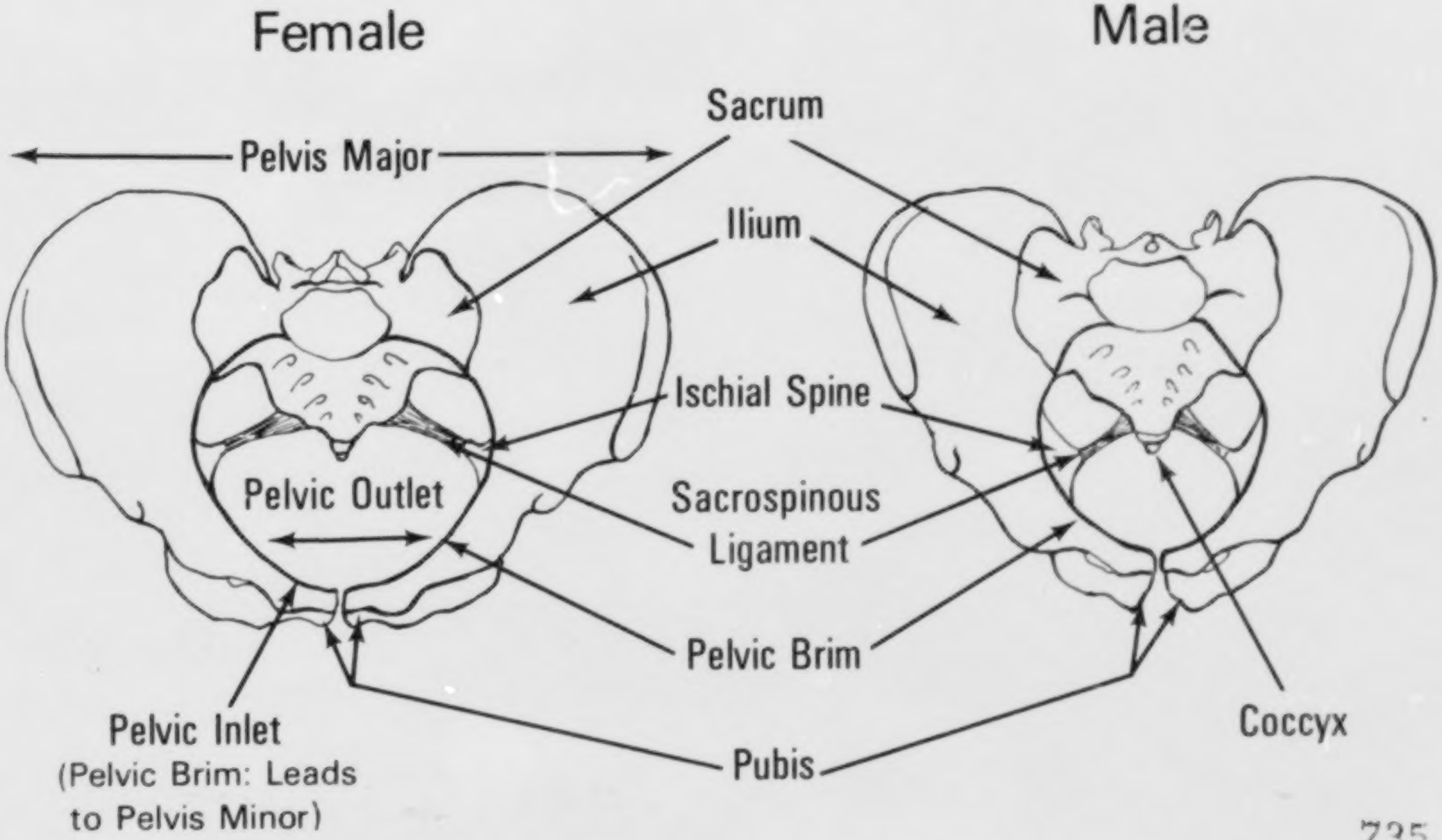
Anterior View of the Skeleton


Cranium
Clavicle
Scapula
Sternum
Xiphoid process
Humerus
Ilium
Radius
Sacrum
Ulna
Coccyx
Carpals
Greater trochanter
Metacarpals
Pubis
Phalanges
Femur
Ischium
Patella
Tibia
Fibula
Tarsals
Metatarsals
Phalanges

Posterior View of the Skeleton


Cranium
Cervical vertebrae
Scapula
Thoracic vertebrae
Ribs
Humerus
Lumbar vertebrae
Ilium
Sacrum
Coccyx
Ulna
Radius
Femur
Tibia
Fibula
Calcaneus

Female and Male Pelvis


Female
Male
Pelvis Major
Sacrum
Ilium
Ischial Spine
Pelvic Outlet
Sacrospinous Ligament
Pelvic Brim
Pelvic Inlet
(Pelvic Brim: Leads to Pelvis Minor)
Pubis
Coccyx

THE SKELETAL SYSTEM
UNIT V

ASSIGNMENT SHEET #1--IDENTIFY BONES

1. Using a skeleton, identify the following
   a. One example of each of the five types of bones: long, short, flat, irregular, and sesamoid
   b. Examples of the bone markings: condyle, crest, foramen, fossa, head, sinus, process, tuberosity, meatus, and trochanter
   c. Three types of joints: immovable, slightly movable, and freely movable
   d. The axial skeleton; the appendicular skeleton
   e. Four types of freely movable joints
2. Using your own body, demonstrate types of movements:
   a. Flexion
   b. Extension
   c. Abduction
   d. Adduction
   e. Rotation
   f. Supination
   g. Pronation

THE SKELETAL SYSTEM
UNIT V

TEST

1. Match the terms on the right to the correct definition. (Question continues on next page.)

______a. White elastic substance attached to bone surfaces at the joints

______b. Central space in a long bone

______c. Chamber or cavity in a bone

______d. Hole or opening for passage of blood vessels, nerves, and ligaments

______e. Openings, hollows, depressions, projections, or processes which serve a specific purpose

______f. Pertaining to the central part; the skeleton of the head and trunk

______g. Study of joints

______h. Large roughened projection

______i. Line of junction of cranial bones

______j. Tube-shaped opening

______k. Depression or hollow, usually to accommodate some other nearby structure

______l. Womanlike; resembling a woman

______m. Manlike; resembling a man

______n. Tough, fibrous band binding together bones or supporting internal organs

1. Appendage
2. Osteology
3. Fontanel
4. Fossa
5. Condyle
6. Process
7. Suture
8. Tuberosity
9. Head
10. Crest
11. Medullary cavity
12. Trochanter
13. Gynecoid
14. Android
15. Ligament
16. Foramen
17. Bone markings
18. Sinus
19. Meatus
20. Appendicular
21. Axial
22. Arthrology

______o. Narrow edge or ridge on a bone

______p. Study of bones

______q. Point where bones are joined together; a joint

______r. Rounded portion beyond the narrow necklike portion of a long bone

______s. Knob or rounded piece at the end of a bone that helps make a joint

______t. Small rounded bone projection

______u. Anything attached to a larger part, as an arm, leg, or tail; a dependent part

______v. Pertaining to a limb or an appendage

______w. In the fetus and newborn, the membranous site of the future union of two or more bones

______x. Very large process on a bone

23. Cartilage

24. Articulation

2. List five functions of the skeletal system.

a.

b.

c.

d.

e.

3. List three components of bones.

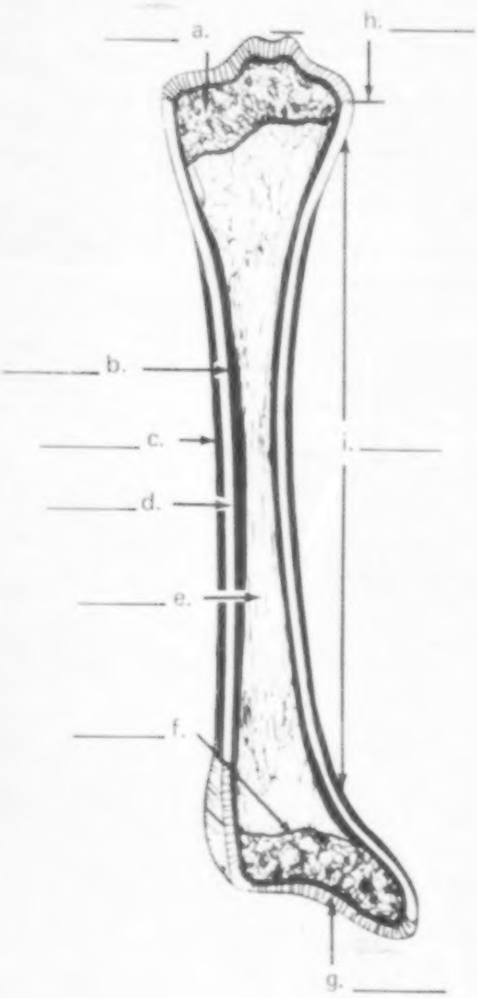
a.

b.

c.

4. Label the parts of a long bone by writing the correct numbers in the blanks.

1. Diaphysis
2. Epiphyseal cartilage
3. Bone marrow or medullary cavity
4. Cancellous bone
5. Epiphysis
6. Endosteum
7. Compact bone
8. Periosteum
9. Articular cartilage



5. Select and place appropriate letter to the left of the list of bones using long (L), short (S), flat (F), irregular (I), and sesamoid (SE) bones.

______a. Ribs

______b. Wrist

______c. Patella

______d. Hip

______e. Humerus

______f. Face

______g. Ankle

______h. Tibia

______i. Sternum

______j. Radius

6. List six bone markings.

a.

b.

c.

d.

e.

f.

7. Describe the axial and appendicular skeletons.

a.

b.

8. List three classifications of joints according to amount of movement naming one of each type.

a.

b.

c.

9. Describe the four types of freely movable joints.

   a. Ball and socket joints

   b. Hinge joints

   c. Pivot joints

   d. Gliding joints

10. List seven types of movement in joints.

    a.

    b.

    c.

    d.

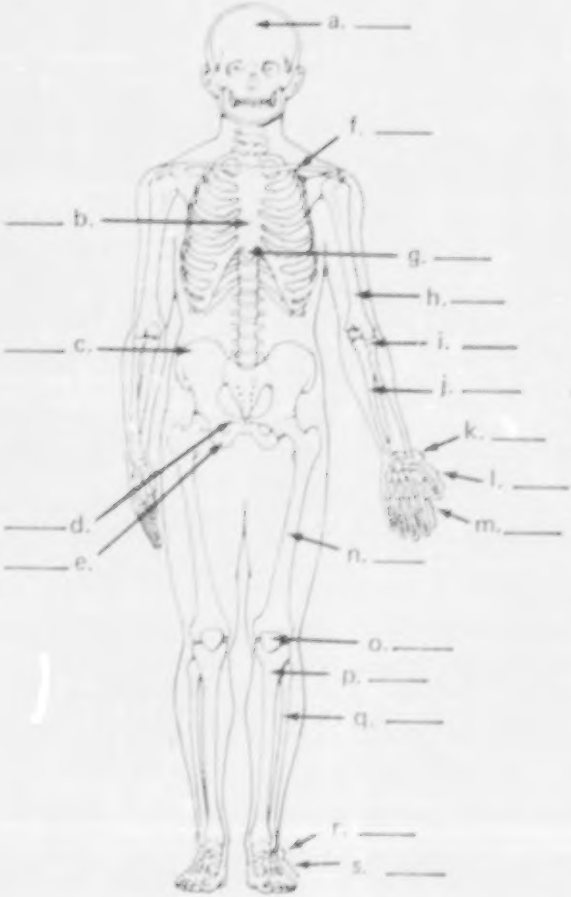
    e.

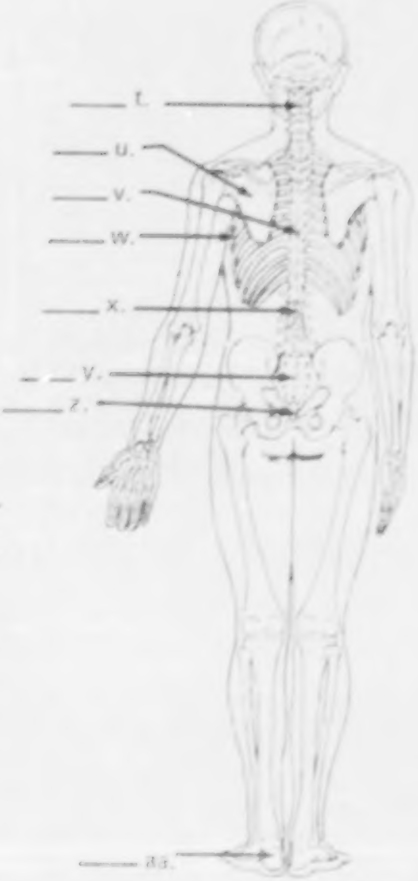
    f.

    g.

11. Identify the bones on these diagrams by placing the correct number in the blanks.

1. Tibia
2. Sacrum
3. Xiphoid process
4. Phalanges
5. Scapula
6. Tarsals
7. Metacarpals
8. Sternum
9. Cervical vertebrae
10. Humerus
11. Calcaneus
12. Cranium
13. Thoracic vertebrae
14. Radius
15. Coccyx
16. Metatarsals
17. Ribs
18. Patella
19. Lumbar vertebrae
20. Carpals
21. Ilium
22. Fibula
23. Pubis
24. Ulna
25. Ischium
26. Clavicle
27. Femur





12. Describe the growth of bones.

13. Discuss the effects of age and sex on bone growth.

14. Describe the differences in the female and male pelvis.

15. List four health practices to maintain the integrity of the skeletal system.

    a.

    b.

    c.

    d.

THE SKELETAL SYSTEM
UNIT V

ANSWERS TO TEST

1. a. 23
   b. 11
   c. 18
   d. 16
   e. 17
   f. 21
   g. 22
   h. 8
   i. 7
   j. 19
   k. 4
   l. 13
   m. 14
   n. 15
   o. 10
   p. 2
   q. 24
   r. 9
   s. 5
   t. 6
   u. 1
   v. 20
   w. 3
   x. 12

2. a. Provide shape and support
   b. Assist in body movement
   c. Protect vital organs
   d. Manufacture red blood cells, platelets, and some white cells
   e. Store minerals such as calcium and phosphorus
3. a. Inorganic salts such as calcium phosphate
   b. Organic materials such as bone cells, blood vessels, nerves, and cartilage
   c. Water
4. a. 4
   b. 7
   c. 8
   d. 6
   e. 3
   f. 2
   g. 9
   h. 5
   i. 1
5. a. F
   b. S
   c. SE
   d. I
   e. L
   f. I
   g. S
   h. L
   i. F
   j. L

6. Any six of the following
    - a. Condyle
    - b. Crest
    - c. Foramen
    - d. Fossa
    - e. Head
    - f. Sinus
    - g. Process
    - h. Tuberosity
    - i. Meatus
    - j. Trochanter
7. Description should include:
    - a. Axial skeleton--The bony framework of the head and the trunk
        - 1) Skull
        - 2) Vertebrae
        - 3) Ribs and sternum
    - b. Appendicular skeleton--The framework of the extremities
        - 1) Upper extremities
        - 2) Lower extremities
8. List should include a, b, and c with one type of each
    - a. Immovable with no joint cavities
        - 1) Skull sutures
        - 2) Epiphyseal cartilage of the long bones
    - b. Slightly movable
        - 1) Vertebral discs
        - 2) Symphysis pubis
        - 3) Sacroiliac joints

c. Freely movable
    1) Shoulder joints
    2) Elbow, wrist, and finger joints
    3) Knee and ankle joints

9. Description should include:

a. Ball and socket joints
    1) The head of one bone fits into a cup-like socket of another bone
    2) Movement takes place in all planes plus rotation

b. Hinge joints
    1) A spool-shaped surface fits into a concave surface
    2) Movement consists of flexion and extension and is limited by structure of the joint and by ligaments

c. Pivot joints
    1) An arch-shaped surface surrounds a peg-like pivot
    2) Only movement is rotation

d. Gliding joints
    1) One bony surface glides upon another
    2) No angular or rotary movement

10. a. Flexion
    b. Extension
    c. Abduction
    d. Adduction
    e. Rotation
    f. Supination
    g. Pronation

11. a. 12
b. 8
c. 21
d. 23
e. 25
f. 26
g. 3
h. 10
i. 14
j. 24
k. 20
l. 7
m. 4
n. 27
o. 18
p. 1
q. 22
r. 6
s. 16
t. 9
u. 5
v. 13
w. 17
x. 19
y. 2
z. 15
aa. 11

12. Description should include:

a. At birth, bones are soft cartilage and gradually mature and grow in size

b. As bones mature, calcium phosphate is deposited in the cartilage and long fibers

c. Large amounts of calcium, phosphorus, and Vitamin D are required for bone growth

d. To prevent bones from becoming completely solid, an orderly tearing-down process takes place at all times in the medullary cavity

e. Every bone has an inner space for bone marrow

1) To manufacture blood cells

2) To aid in the nourishment of the bone itself

3) To prevent the bone from being too heavy

13. Discussion should include:

a. Noticeable growth takes place until puberty and then slows until the end of adolescence

b. Skeletal maturity is reached at approximately twenty years in the female, twenty-three years in the male

c. From soft bone at birth, bones gradually become harder and in advanced age become brittle and easily broken

d. Female skeleton is lighter and smaller than the male

14. Description should include:

    a. The cavity of a female pelvis is shallower and broader

    b. The inlet and outlet of a female pelvis are larger

    c. The pubic arch of a female pelvis is wider

    d. The bones of a female pelvis are lighter in weight

    e. The female coccyx is more flexible

15. Any four of the following

    a. Maintain good posture

    b. Give special attention to foot care

        1) Bathe daily; dry thoroughly

        2) Trim nails straight across

        3) Wear well-fitted shoes; keep in good condition

        4) Wear hose of proper size

    c. Maintain adequate diet for growth and maintenance including Vitamin D, calcium, iron, phosphorus, and protein

    d. Use correct body mechanics

    e. Exercise regularly

THE MUSCULAR SYSTEM
UNIT VI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to identify the parts of a muscle and describe the functions and characteristics of muscles. The student should be able to list types of muscle action and locate muscles on a diagram. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the muscular system to the correct definition.
2. Name the three parts of a muscle.
3. Name the two muscle attachments.
4. Describe the major functions of the muscles.
5. Discuss the characteristics of muscle tissue.
6. List eight types of muscles and their actions.
7. Identify the principal skeletal muscles on diagrams.
8. Name three areas best suited for intramuscular injections.
9. List five ways to help maintain the muscular system.
10. List two ways to help maintain the cardiac muscles.

THE MUSCULAR SYSTEM
UNIT VI

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information and assignment sheets and transparencies.

  F. Locate muscles on models or on one of the students.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet and transparencies.

  C. Complete assignment sheets.

  D. Locate muscles on oneself.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency masters

    1 TM 1 Parts of a Typical Muscle

    2. TM 2 Coordinated Movement

    3 TM 3 Muscles Anterior View

    4. TM 4 Muscles Posterior View

D. Assignment sheets

   1. Assignment Sheet #1--Muscle Action and Identification

   2. Assignment Sheet #2--Maintaining Muscle Integrity

E. Answers to assignment sheets

F. Test

G. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1969.

B. Memmler, Ruth L. and Ruth B. Rada. *The Human Body in Health and Disease.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1970.

C. Thomas, Virginia E. *Life Sciences for Health Technologies.* Los Angeles, California: Technicourse Inc., 1970.

III. Filmstrip--"The Muscular System." Robert J. Brady Company.

THE MUSCULAR SYSTEM
UNIT VI

INFORMATION SHEET

I. Terms and definitions

A. Myology--Study of muscles

B. Skeletal muscles--Bundles of striated muscle tissue surrounded by connective tissue

C. Tendon--Narrow strip of dense connective tissue that attaches a muscle to a bone

D. Aponeurosis--Broad, sheet-like piece of dense connective tissue that attaches a muscle to a bone or another muscle

E. Contractility--Ability of a muscle to shorten and thicken when given the proper stimulus

F. Elasticity--Ability of the muscle to return to its original length after stretching

G. Extensibility--Ability of a muscle to stretch

H. Irritability--Ability of a muscle to respond to stimulation

I. Tonus--Slight tension in the muscle

J. Flaccid--Lacking tone in a muscle

K. Muscle fatigue--Loss of power to contract after prolonged periods of muscle contraction

L. Atrophy--Wasting away (degeneration) of a muscle

M. Prime mover--Muscle primarily responsible for a specific action

N. Antagonist--Muscle which counteracts with a prime mover

O. Intramuscular--Within a muscle

P. Injection--Introduction of a fluid substance into the body, usually by means of a syringe or other device connected to a hollow needle

Q. Acromion--Lateral triangular projection of the scapula forming the point of the shoulder and articulating with the clavicle

R. Sternocleidomastoid--Pertaining to the sternum, clavicle, and mastoid

INFORMATION SHEET

II. Parts of a muscle (Transparency 1)

A. Origin

1. Less movable end of a muscle

2. Attached to the less movable end of a bone

3. Usually, attachment of origin is the end of the muscle closer to the trunk

B. Body or belly–Main part of the muscle

C. Insertion–Attachment on the more movable bone or the end farther away from the trunk

III. Muscle attachments

A. Tendon

Example: Achilles tendon in the heel

B. Aponeurosis

Example: Broad attachment of latissimus dorsi to the lower spinous processes, the sacrum, and lower ribs

IV. Major functions of the muscles

A. Movement

1. Locomotion–Moving from one place to another

2. Small movements such as adjustment of pupil to light

3. Internal movements–Pushing blood through blood vessels; pulling air into the lungs and forcing it out

B. Heat and energy resulting from a complicated chemical reaction

C. Posture and body mechanics

1. Muscles function with the bones, joints, nerves, and brain to maintain balance and posture

2. Muscle to bone and muscle to muscle attachments provide a system of checks and balances to allow the body to run, lift, sit, stand, walk, and bend

D. Protection of internal organs

INFORMATION SHEET

V. Characteristics of muscle tissue

   A. Contractility

      1. When a muscle shortens, it exerts pull

      2. Muscles work in pairs as they contract and relax

      3. A prime mover contracts as an antagonist relaxes (Transparency 2)

         Example: Biceps brachii, a prime mover, contracts to flex the forearm as the triceps brachii, the antagonist, relaxes; to extend the arm, the triceps brachii contracts and the biceps brachii relaxes

   B. Elasticity

   C. Extensibility

   D. Irritability

   E. Tonus--Present at all times even when muscle is resting; a state of readiness to act more easily and quickly when needed

      1. Continued, active use of a muscle causes it to increase in size

      2. Muscular atrophy may occur through lack of use or when nerve supply is damaged

VI. Types of muscle action

   A. Abductors--Move away from a part

   B. Adductors--Move toward a part or to the midline

   C. Levators--Lift a part

   D. Depressors--Lower a part

   E. Flexors--Bend a joint

   F. Extensors--Straighten a joint

   G. Rotators--Revolve a part on its axis

   H. Sphincters--Ring-like muscles that close body openings

VII. Principal skeletal muscles and their location (Transparencies 3 and 4)

   A. Sternocleidomastoid--Neck

   B. Deltoid--Shoulder

INFORMATION SHEET

C. Biceps brachii--Upper arm

D. Triceps brachii--Upper arm

E. Trapezius--Back

F. Latissimus dorsi--Back

G. Pectoralis major--Chest

H. External oblique--Abdominal wall

I. Rectus abdominis--Abdominal wall

J. Gluteus maximus--Buttocks

K. Gluteus medius--Buttocks

L. Quadriceps femoris--Thigh

M. Biceps femoris--Thigh

N. Tibialis anterior--Lower leg

O. Gastrocnemius--Lower leg

P. Vastus lateralis--Lateral thigh

Q. Orbicularis oculi--Around eye

R. Orbicularis oris--Around mouth

S. Achilles tendon--Back of heel

VIII. Areas best suited for intramuscular injections

(IMPORTANT: Proper site for intramuscular injections is one which avoids major nerves and blood vessels.)

A. Deltoid muscle at least two centimeters below the acromion

B. Gluteus medius in upper, outer quadrant of buttocks

C. Vastus lateralis

IX. Maintaining the muscular system

A. Exercise regularly and sensibly

B. Avoid excessive load which may cause strain on muscles

C. Learn to relax voluntary muscles at will

D. Rest sufficiently to relieve muscle fatigue

INFORMATION SHEET

E. Use proper body mechanics at all times

F. Eat adequate diet to supply energy for muscle action

(NOTE: Carbohydrate is stored in the form of glycogen in the muscles. When needed, glycogen is broken down into a simple sugar, glucose, which can be used by the muscle for energy.)

G. Maintain adequate oxygen supply

(NOTE: During strenuous activity, a person is not able to inhale enough oxygen to satisfy the oxygen requirement of the muscles. This results in an oxygen debt.)

Example: A man running the one-hundred yard dash requires over six liters of oxygen, but during the time he is running he can only absorb one-sixth that amount. This oxygen debt must be repaid during a resting or recovery period following the exercise or muscle fatigue will result with loss of muscle strength.

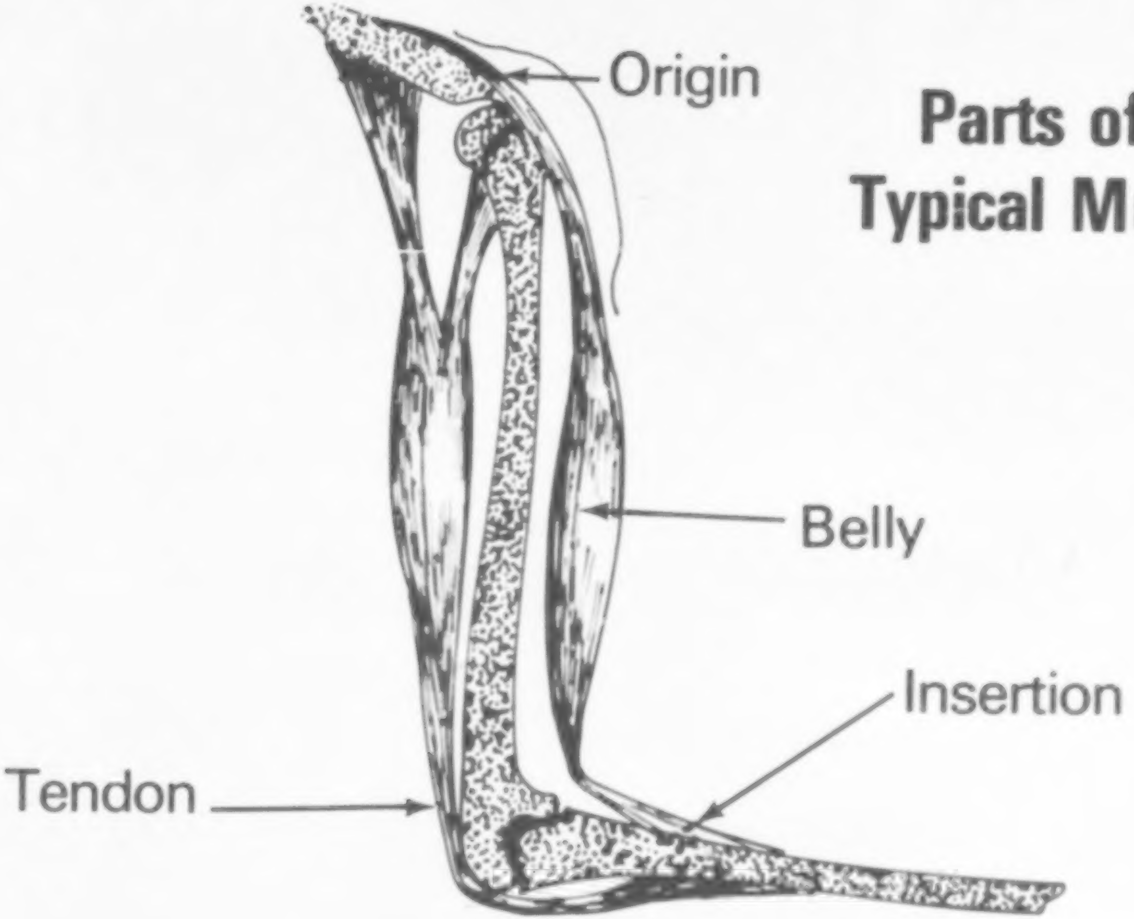
X. Maintaining cardiac muscles

A. Avoid obesity

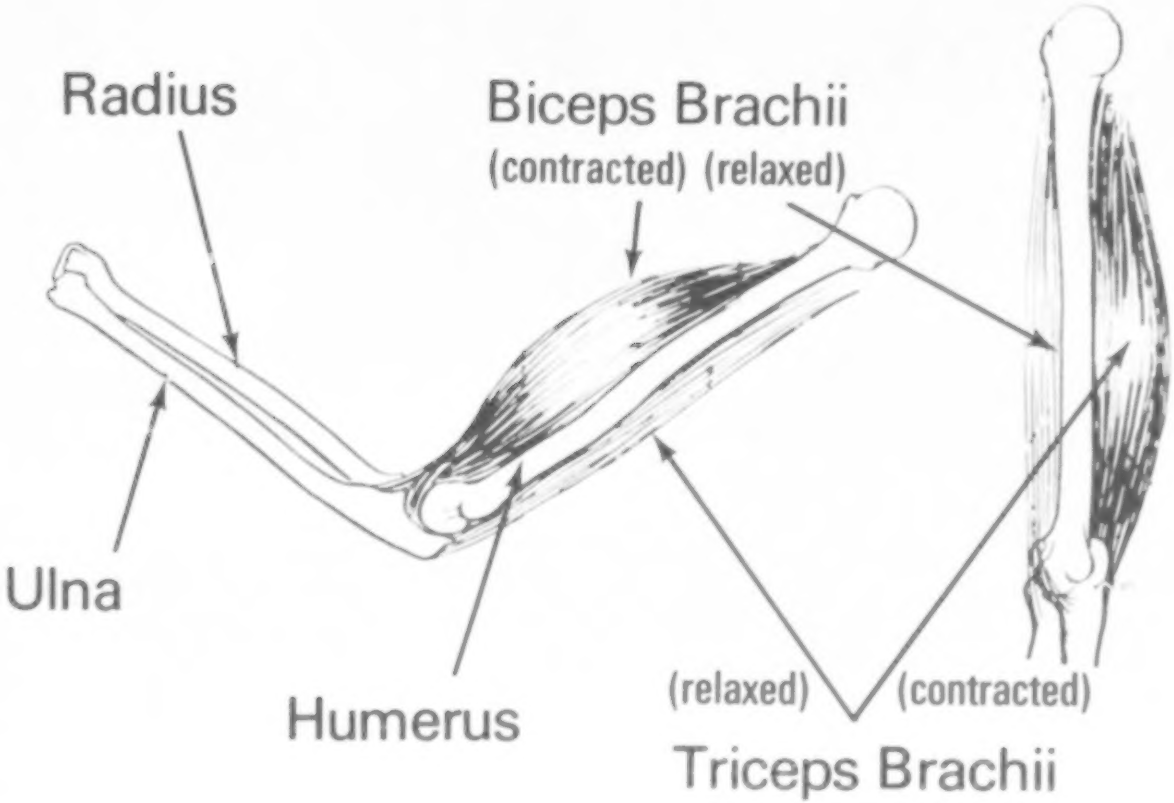
B. Exercise regularly and moderately

C. Avoid overworking the heart by occasional bursts of strenuous exercise, overeating, or immoderate use of alcohol, tobacco, or drugs

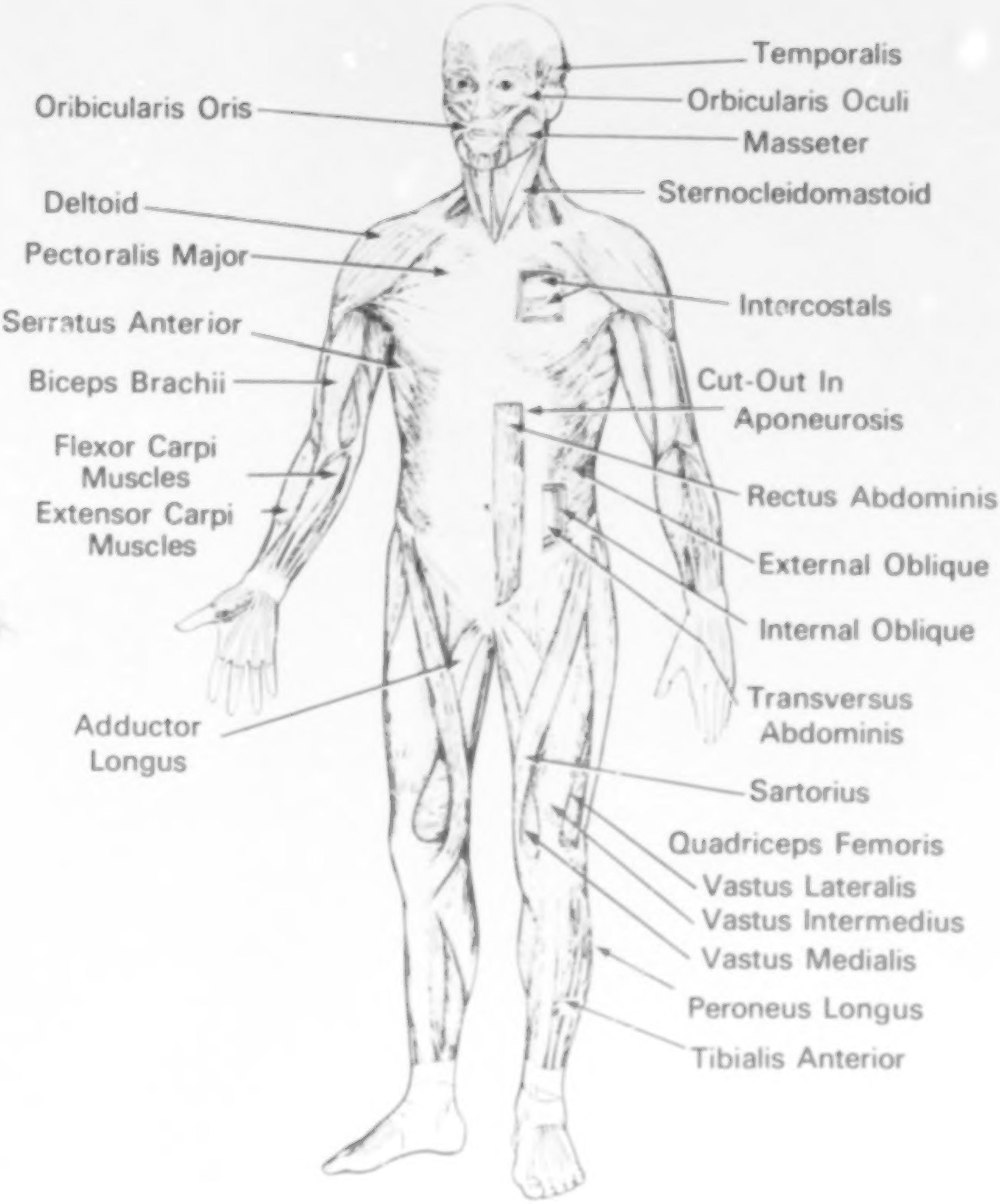
Parts of a Typical Muscle


Origin
Belly
Insertion
Tendon

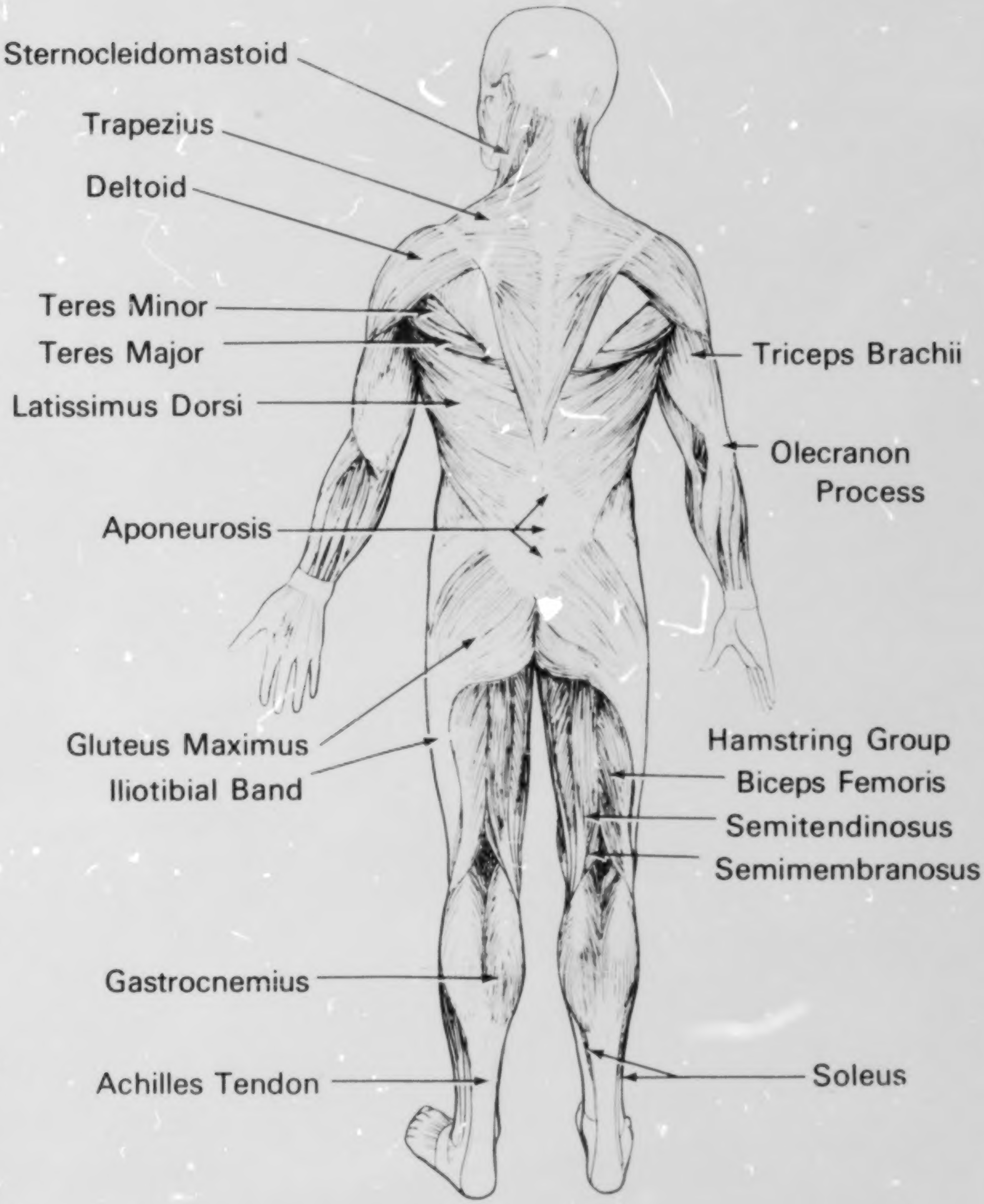
Coordinated Movement


Radius
Biceps Brachii
(contracted) (relaxed)
Ulna
Humerus
(relaxed)
(contracted)
Triceps Brachii

Muscles--Anterior View


Temporalis
Oribicularis Oris
Orbicularis Oculi
Masseter
Sternocleidomastoid
Deltoid
Pectoralis Major
Intercostals
Serratus Anterior
Biceps Brachii
Cut-Out In Aponeurosis
Flexor Carpi Muscles
Rectus Abdominis
Extensor Carpi Muscles
External Oblique
Internal Oblique
Transversus Abdominis
Adductor Longus
Sartorius
Quadriceps Femoris
Vastus Lateralis
Vastus Intermedius
Vastus Medialis
Peroneus Longus
Tibialis Anterior

Muscles--Posterior View


Sternocleidomastoid
Trapezius
Deltoid
Teres Minor
Teres Major
Latissimus Dorsi
Aponeurosis
Gluteus Maximus
Iliotibial Band
Gastrocnemius
Achilles Tendon
Triceps Brachii
Olecranon Process
Hamstring Group
Biceps Femoris
Semitendinosus
Semimembranosus
Soleus

THE MUSCULAR SYSTEM
UNIT VI

ASSIGNMENT SHEET #1--MUSCLE ACTION AND IDENTIFICATION

1. The student will demonstrate the type of muscle action listed below using his/her own body.
   a. Abduction
   b. Adduction
   c. Elevation
   d. Depression
   e. Flexion
   f. Extension
   g. Rotation
   h. Supination
   i. Pronation
   j. Circumduction
2. Identify the principal skeletal muscles on a model or chart.

THE MUSCULAR SYSTEM
UNIT VI

ASSIGNMENT SHEET #2--MAINTAINING MUSCLE INTEGRITY

1. Explain the value of rest in maintaining the muscle system.

2. Explain the value of exercise in muscle maintenance.

3. Discuss causes and effects of muscle fatigue.

ASSIGNMENT SHEET #2

4. Discuss some of the adverse results of immobility.

References:

A. Bilger, Annetta J. and Ellen H. Greene. *Winters' Protective Body Mechanics: A Manual for Nurses.* New York: Springer Publishing Company, Inc., 1973.

B. Dienhart, Charlotte M. *Basic Human Anatomy and Physiology.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1967.

C. Manner, Harold W. *Elements of Anatomy and Physiology.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1962.

D. Mitchell, Pamela H. *Concepts Basic to Nursing.* New York: McGraw-Hill Book Company, 1973.

E. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

THE MUSCULAR SYSTEM
UNIT VI

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

Reference--Culver, Vivian M. *Modern Bedside Nursing*. Philadelphia, Pennsylvania: W. B. Saunders Company, 1969, pg. 82.

Assignment Sheet #2

(NOTE: These are some of the possible answers. Students should not be expected to include all this information and may include other information.)

1. The value of rest in maintaining the muscle system

   a. Muscles are normally in a state of readiness, a state of partial contraction, ready to act when stimulated. (Muscle tone)

   b. Muscles are machines that convert chemical energy (power) into mechanical energy (action).

   c. Energy involved in muscle contraction results in production of heat and movement.

   d. Carbohydrate, stored in the muscle as glycogen, is the source of energy for muscle contraction. When glycogen is needed, it is broken down into the simple sugar, glucose, which can be used by the muscle to produce energy.

   e. A complex chemical reaction takes place in the muscle with glycogen being reduced to lactic acid. During strenuous exercise, the body is unable to take in enough oxygen to supply the muscle so lactic acid accumulates in the muscle.

   f. As lactic acid in the muscle increases, the muscle becomes fatigued and contractions become weaker; contractility decreases or ceases.

   g. A period of rest is needed so part of the lactic acid can be changed to carbon dioxide and water to be excreted and the remaining lactic acid can be changed back to glycogen and stored for later use.

   Information for A through G: Dienhart, Charlotte M. *Basic Anatomy and Physiology*. Philadelphia, Pennsylvania: W. B. Saunders Company, 1967, pg. 57.

   h. Summary--The act of muscle contraction involves a large amount of chemistry. During contraction, a muscle uses energy. After contraction, a muscle is incapable of contracting again until this store of energy is rebuilt during a resting period.

Information for H: Manner, Harold W. *Elements of Anatomy and Physiology*. Philadelphia, Pennsylvania: W. B. Saunders Company, 1962, pg. 71.

2. The value of exercise in muscle maintenance

   a. Lack of use of muscles may lead to atrophy, a wasting away of a muscle. (Atrophy can also be caused by damaged nerve supply.)

   b. Poor posture and faulty body mechanics result in decreased muscle tone, lessened range of motion, fatigue, and low back pain.

   c. Exercise helps maintain muscle tone or strength, increases range of motion, stimulates good posture habits, and maintains circulation.

   d. To teach others effectively, the nurse must be a practitioner of exercise.

   e. Activity and change of position help maintain muscle tone and prevent fatigue in patients.

   Information source: Bilger, Annetta J. and Ellen H. Greene. *Winters' Protective Body Mechanics: A Manual for Nurses*. New York: Springer Publishing Company, Inc., 1973, pp. 8, 18, 23.

3. Muscle fatigue

Causes	Effects
a. Poor posture	a. Decreased oxygen-carbon dioxide exchange Decreased circulation Decreased muscle tone Some muscles become over-strained, others over-relaxed
b. Using muscles incorrectly; poor body mechanics	b. Muscle strain of weaker muscles (Heaviest work should be done by longest and strongest muscles.)
c. Inadequate nutrition or poorly balanced diet	c. Decreased metabolism due to lack of nutrients needed for energy Decreased elimination (constipation) with accumulation of waste products in tissues
d. Lack of use	d. Loss of tone and strength (May lead to permanent disability and loss of function Lowered blood pressure Decreased circulation

e. Sporadic strenuous exercise	e. Increased muscle fatigue, strain, or sprain

Information source: Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973, pp. 25-27; 102-103.

4. Adverse results of immobility

   a. Loss of muscle strength and mass

   b. Loss of joint mobility

   c. Loss of calcium in bone

   d. Decrease or loss of nerve function

   e. Decrease in sensation and perception

   f. Decreased strength of respiratory function

   g. Increased work of the heart

   h. Decreased tolerance for exercise

   i. Postural hypotension

   j. Dependent edema

   k Thrombus and embolus formation

   l. Decreased basal metabolic rate

   m. Negative nitrogen balance (increased excretion of nitrogen)

   n. Negative calcium balance (increased excretion of calcium)

   o. Increase in renal blood flow

   p. Increase in urinary output

   q. Constipation

   r. Poor personal hygiene due to dependency on others

   s. Pressure areas or sores

   Information source: Mitchell, Pamela H. *Concepts Basic to Nursing.* New York: McGraw-Hill Book Company, 1973, pp. 224-247.

THE MUSCULAR SYSTEM
UNIT VI

TEST

1. Match the terms on the right to the correct definition.

______a. Ability of a muscle to stretch

______b. Ability of a muscle to shorten and thicken when given the proper stimulus

______c. Lacking tone in a muscle

______d. Study of muscles

______e. Narrow strip of dense connective tissue that attaches a muscle to a bone

______f. Broad, sheet-like piece of dense connective tissue that attaches a muscle to a bone or another muscle

______g. Bundles of striated muscle tissue surrounded by connective tissue

______h. Ability of a muscle to return to its original length after stretching

______i. Ability of a muscle to respond to stimulation

______j. Slight tension in the muscle

______k. Loss of power to contract after prolonged periods of muscle contraction

______l. Wasting away (degeneration) of a muscle

______m. Muscle which counteracts with a prime mover

______n. Muscle primarily responsible for a specific action

1. Elasticity
2. Aponeurosis
3. Skeletal muscles
4. Muscle fatigue
5. Tonus
6. Antagonist
7. Flaccid
8. Contractility
9. Intramuscular
10. Tendon
11. Myology
12. Sternocleidomastoid
13. Extensibility
14. Irritability
15. Acromion
16. Atrophy
17. Prime mover
18. Injection

______o. Within a muscle

______p. Pertaining to the sternum, clavicle, and mastoid

______q. Introduction of a fluid substance into the body, usually by means of a syringe or other device connected to a hollow needle

______r. Lateral triangular projection of the scapula forming the point of the shoulder and articulating with the clavicle

2. Name the three parts of a muscle.

   a.

   b.

   c.

3. Name the two muscle attachments.

   a.

   b.

4. Describe the major functions of the muscles.

   a.

   b.

   c.

d.

5. Discuss the characteristics of muscle tissue.

a.

b.

c.

d.

e.

6. List eight types of muscles and their actions.

a.

b.

c.

d.

e.

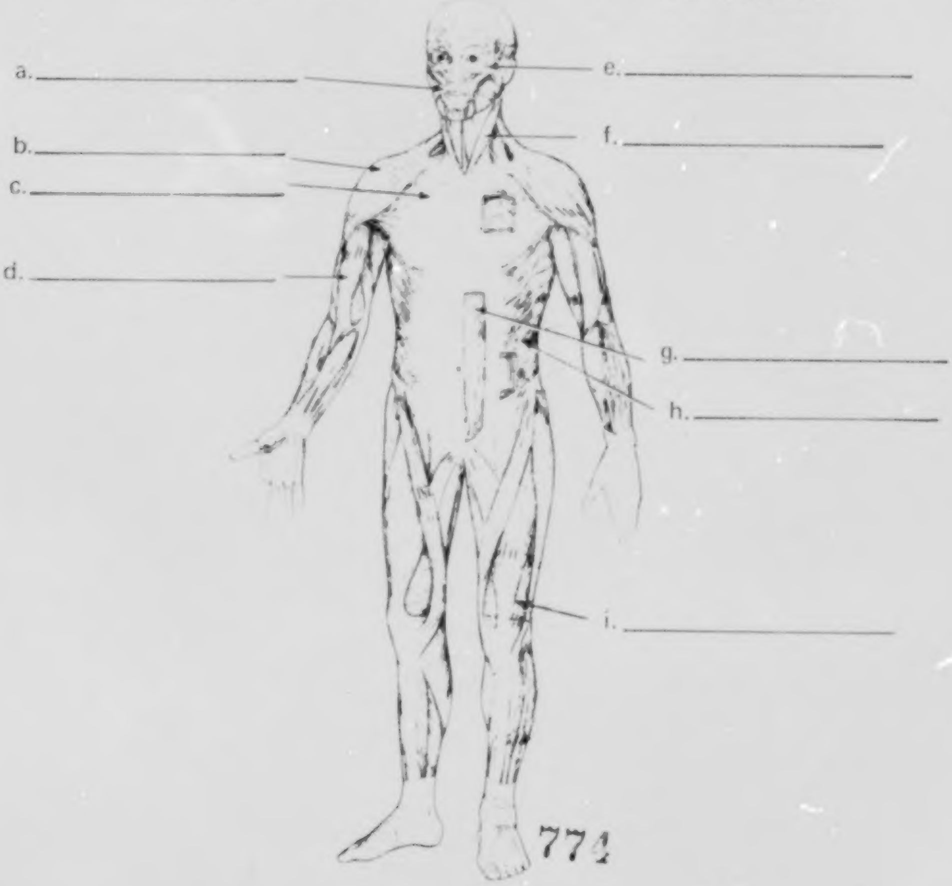
f.

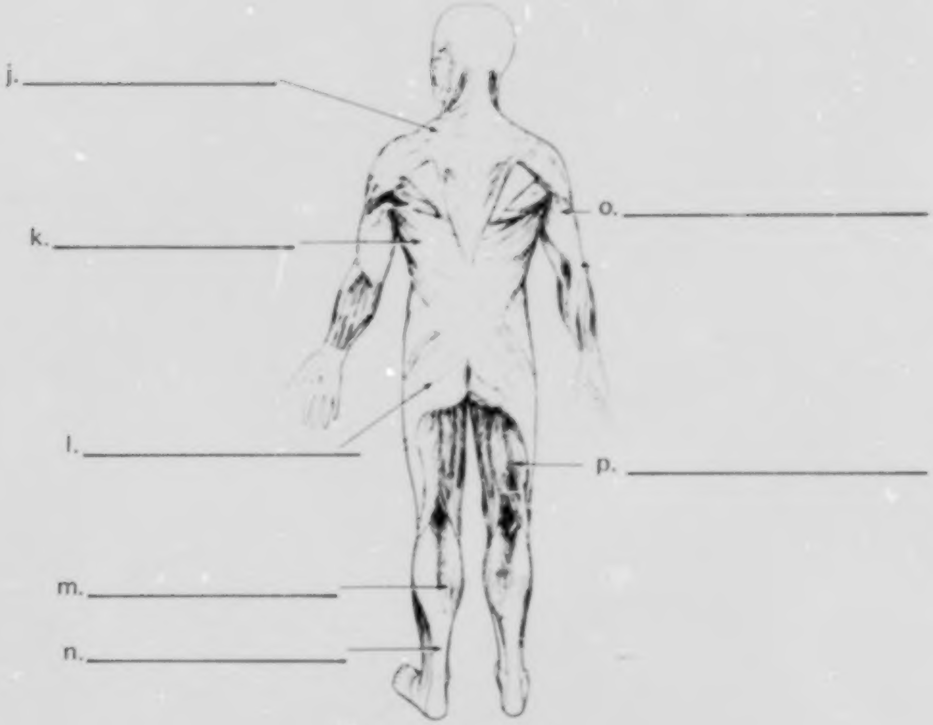
g.

h.

7. Identify the principal skeletal muscles on this diagram and the one on the following page by placing the correct number in the blanks.

1. Achilles tendon
2. Biceps brachii
3. Biceps femoris
4. Deltoid
5. External oblique
6. Gastrocnemius
7. Gluteus maximus
8. Latissimus dorsi
9. Orbicularis oculi
10. Orbicularis oris
11. Pectoralis major
12. Sternocleidomastoid
13. Trapezius
14. Triceps brachii
15. Vastus lateralis
16. Rectus abdominis





8. Name three areas best suited for intramuscular injections.

   a.

   b.

   c.

9. List five ways to help maintain the muscular system.

   a.

   b.

   c.

   d.

   e.

10. List two ways to help maintain the cardiac muscles.

    a.

    b.

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THE MUSCULAR SYSTEM
UNIT VI

ANSWERS TO TEST

1. a. 13

b. 8

c. 7

d. 11

e. 10

f. 2

g. 3

h. 1

i. 14

j. 5

k. 4

l. 16

m. 6

n. 17

o. 9

p. 12

q. 18

r. 15

2. a. Origin

b. Body or belly

c. Insertion

3. a. Tendon

b. Aponeurosis

4. Description should include:
   a. Movement
      1) Locomotion--Moving from one place to another
      2) Small movements such as adjustment of pupil to light
      3) Internal movements--Pushing blood through blood vessels; pulling air into the lungs and forcing it out
   b. Heat and energy resulting from a complicated chemical reaction
   c. Posture and body mechanics
      1) Muscles function with the bones, joints, nerves, and brain to maintain balance and posture
      2) Muscle to bone and muscle to muscle attachments provide a system of checks and balances to allow the body to run, lift, sit, stand, walk, and bend
   d. Protection of internal organs
5. Discussion should include:
   a. Contractility
      1) When a muscle shortens, it exerts pull
      2) Muscles work in pairs as they contract and relax
      3) A prime mover contracts as an antagonist relaxes
   b. Elasticity
   c. Extensibility
   d. Irritability
   e. Tonus--Present at all times even when muscle is resting; a state of readiness to act more easily and quickly when needed
      1) Continued, active use of a muscle causes it to increase in size
      2) Muscular atrophy may occur through lack of use or when nerve supply is damaged
6. a. Abductors--Move away from a part
   b. Adductors--Move toward a part or to the midline
   c. Levators--Lift a part
   d. Depressors--Lower a part

e. Flexors--Bend a joint

f. Extensors--Straighten a joint

g. Rotators--Revolve a part on its axis

h. Sphincters--Ring-like muscles that close body openings

7. a. 10

b. 4

c. 11

d. 2

e. 9

f. 12

g. 16

h. 5

i. 15

j. 13

k. 8

l. 7

m. 6

n. 1

o. 14

p. 3

8. a. Deltoid muscle at least two centimeters below the acromion

b. Gluteus medius in upper, outer quadrant of buttocks

c. Vastus lateralis

9. Any five of the following

a. Exercise regularly and sensibly

b. Avoid excessive load which may cause strain on muscles

c. Learn to relax voluntary muscles at will

  - d. Rest sufficiently to relieve muscle fatigue
  - e. Use proper body mechanics at all times
  - f. Eat adequate diet to supply energy for muscle action
  - g. Maintain adequate oxygen supply

10. Any two of the following
  - a. Avoid obesity
  - b. Exercise regularly and moderately
  - c. Avoid overworking the heart by occasional bursts of strenuous exercise, overeating, or immoderate use of alcohol, tobacco, or drugs

THE DIGESTIVE SYSTEM: THE ALIMENTARY CANAL
UNIT VII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to match terms and definitions associated with the alimentary canal. The student should be able to describe the organs of the digestive system, distinguish between the true digestive and accessory organs, list functions of the organs, and identify digestive organs on diagrams. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the digestive system to the correct definition.
2. Identify the digestive organs on a diagram.
3. Distinguish between the organs of the alimentary canal and the accessory organs.
4. List five structures of the mouth.
5. Describe the functions of the mouth.
6. Describe the structure and functions of the esophagus.
7. Identify the parts of the stomach on a diagram.
8. Discuss the functions of the stomach.
9. List the functions of the components of gastric juice.
10. Describe the structure of the small intestine.
11. Discuss the functions of the small intestine.
12. Identify the parts of the large intestine.
13. Discuss the functions of the large intestine.

THE DIGESTIVE SYSTEM: THE ALIMENTARY CANAL
UNIT VII

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information sheet.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information sheet.

  F. Assist students in locating digestive organs on a model.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Locate digestive organs on model.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
  A. Objectives
  B. Information sheet
  C. Transparency masters
    1. TM 1--The Digestive Organs
    2. TM 2--Parts of the Stomach
    3. TM 3--Structure of the Villi
    4. TM 4--Parts of the Large Intestine

D. Test

E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Manner, Harold W. *Elements of Anatomy and Physiology.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1962.

C. Memmler, Ruth and Ruth Rada. *The Human Body in Health and Disease* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1970.

D. Memmler, Ruth and Dena Wood. *Workbook for the Human Body in Health and Disease.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

E. Thomas, Vivian. *Life Sciences for Health Technologies.* Los Angeles, California: Technicourse, Inc., 1970.

F. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Additional materials:

A. Films

1. "Exploring the Body--Digestive System," State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1515 West Sixth Avenue, Stillwater, Oklahoma 74074.

2. "Human Body--Digestive System," Oklahoma State Department of Health.

B. Filmstrip--"The Digestive System," Robert J. Brady Company.

THE DIGESTIVE SYSTEM: THE ALIMENTARY CANAL
UNIT VII

INFORMATION SHEET

I. Terms and definitions

  A. Gastroenterology--Study of the digestive system

  B. Digestion--Physical and chemical breakdown of complex foodstuffs into simpler substances which are absorbed into the blood and lymph systems or eliminated from the body

  C. Peristalsis--Rhythmical waves of contraction which move food along the gastrointestinal tract

  D. Mucus--Thick, sticky fluid secreted by some membranes and glands

  E. Chyme--Nearly liquid mixture of partly digested food and digestive secretions found in the stomach and small intestine

  F. Intrinsic factor--Mucoprotein found in gastric juice; necessary for the assimilation of Vitamin B_{12}

  G. Villi--Short, vascular, threadlike projections covering the mucous membrane of the small intestine (Singular--villus)

  (NOTE: See Transparency 3.)

  H. Sphincter--Ringlike muscle fibers which control an outlet, permitting it to open and close

II. Digestive organs (Transparency 1)

  A. Oral cavity

  B. Sublingual glands

  C. Submaxillary glands

  D. Parotid glands

  E. Pharynx

  F. Epiglottis

  G. Esophagus

  H. Stomach

  I. Liver

INFORMATION SHEET

J. Gallbladder

K. Pancreas

L. Small intestine

M. Large intestine

  1. Cecum

  2. Colon (Ascending, transverse, descending)

  3. Sigmoid

  4. Rectum

  5. Anal canal

N. Appendix

III. Alimentary canal and accessory organs

A. Organs of the alimentary canal--Organs which are part of the tube extending from the mouth to the rectum

  1. Oral cavity

  2. Pharynx

  3. Esophagus

  4. Stomach

  5. Small intestine

  6. Large intestine

B. Accessory organs--Organs that aid in digestion of food but do not form the digestive tract itself

  1. Teeth

  2. Tongue

  3. Salivary glands

    a. Parotid

    b. Sublingual

    c. Submaxillary

INFORMATION SHEET

4. Epiglottis
5. Pancreas
6. Liver
7. Gallbladder
8. Appendix

IV. Structures of the mouth

- A. Tongue
- B. Cheeks
- C. Hard palate
- D. Soft palate
- E. Teeth
- F. Pharynx
- G. Salivary glands

V. Functions of the mouth

- A. Softens, chews, and mixes food with saliva (physical change)
- B. Begins digestive process (chemical change)
- C. Changes some starches to sugars

  (NOTE: Digestion of starches continues in small intestine.)
- D. Secretes approximately 1500 cc of saliva daily

VI. Structure and functions of esophagus

- A. Tubular passageway for food from mouth to stomach
- B. Secretes mucus to aid in food movement
- C. Peristalsis begins in esophagus
- D. Epiglottis prevents food from entering the trachea

INFORMATION SHEET

VII. Parts of the stomach (Transparency 2)

- A. Cardiac sphincter
- B. Fundus
- C. Body
- D. Greater curvature
- E. Lesser curvature
- F. Pylorus
- G. Pyloric sphincter

VIII. Functions of the stomach

- A. Prepares food for digestion by changing it from a solid to a semi-fluid material (chyme) by peristalsis
- B. Serves as a reservoir for food for the three or four hours needed for proper mixing
- C. Secretes approximately 2000 cc of gastric juice per day
- D. Begins digestion of proteins

IX. Components of gastric juice

- A. Mucin--Mixture of proteins in mucus that protects the lining of the stomach
- B. Water--A solvent
- C. Enzymes--Act chemically to aid digestion
- D. Intrinsic factor--Aids in absorption of Vitamin B_{12}
- E. Hydrochloric acid
    1. Softens connective tissue in meat
    2. Kills bacteria
    3. Aids in absorption of iron
    4. Activates at least one of the stomach enzymes

INFORMATION SHEET

X. Structure of the small intestine

  A. Small tube about one inch in diameter and twenty feet long

  B. Divided into three parts

    1. Duodenum

    2. Jejunum

    3. Ileum

  C. Lined with permanent folds covered with villi (Transparency 3)

  (NOTE: The folds and villi greatly increase the area of absorption.)

XI. Functions of the small intestine

  A. Bile from the liver and pancreatic juice are emptied into the duodenum

  B. Intestinal juices are secreted in the small intestine

  C. Greater part of digestion and absorption of food occurs

XII. Parts of the large intestine (Transparency 4)

  A. Appendix

  B. Cecum

  C. Ascending colon

  D. Transverse colon

  E. Descending colon

  F. Sigmoid

  G. Rectum

  H. Anal canal

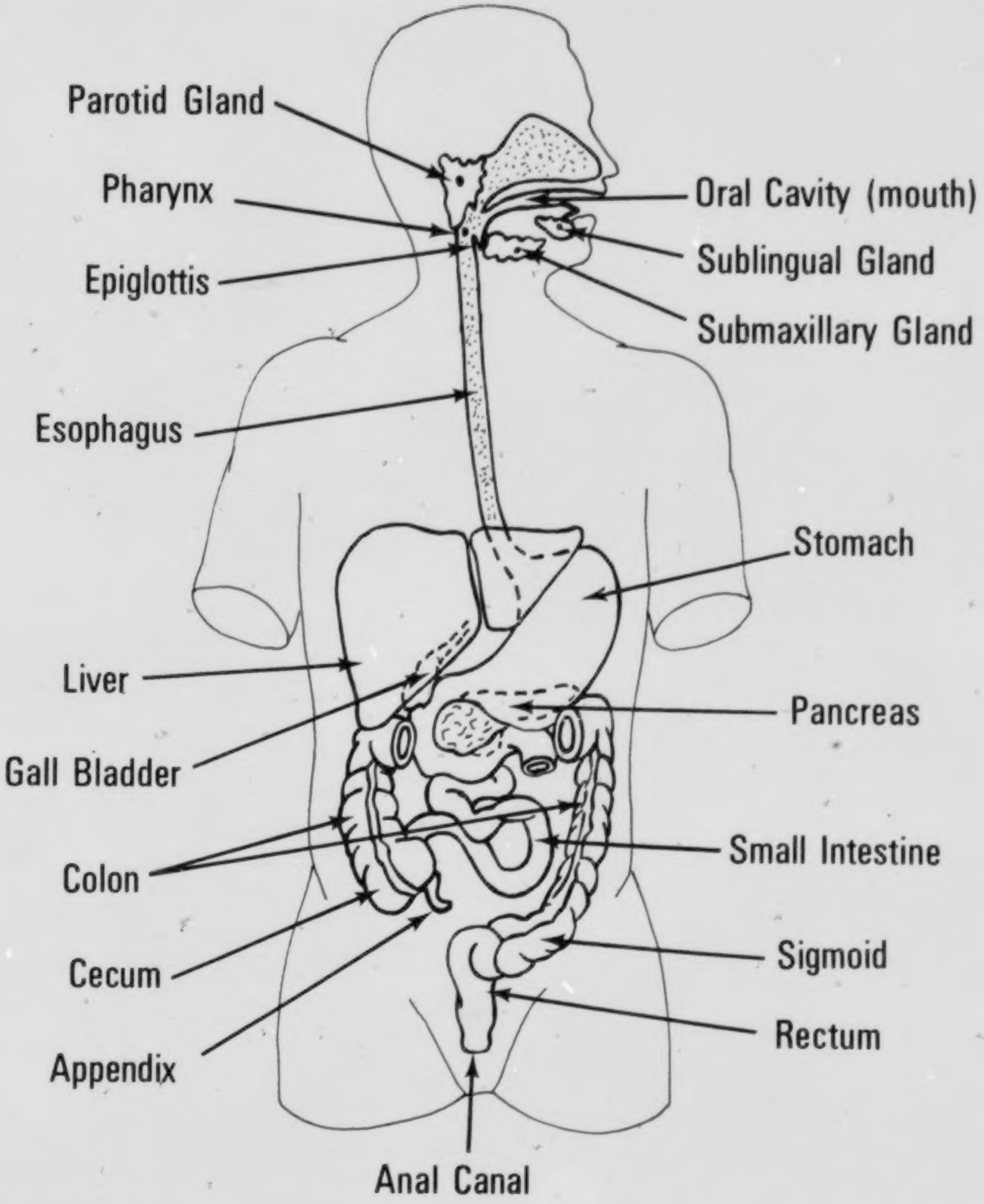
XIII. Functions of the large intestine

  A. Reabsorbs water, mineral salts, and vitamins

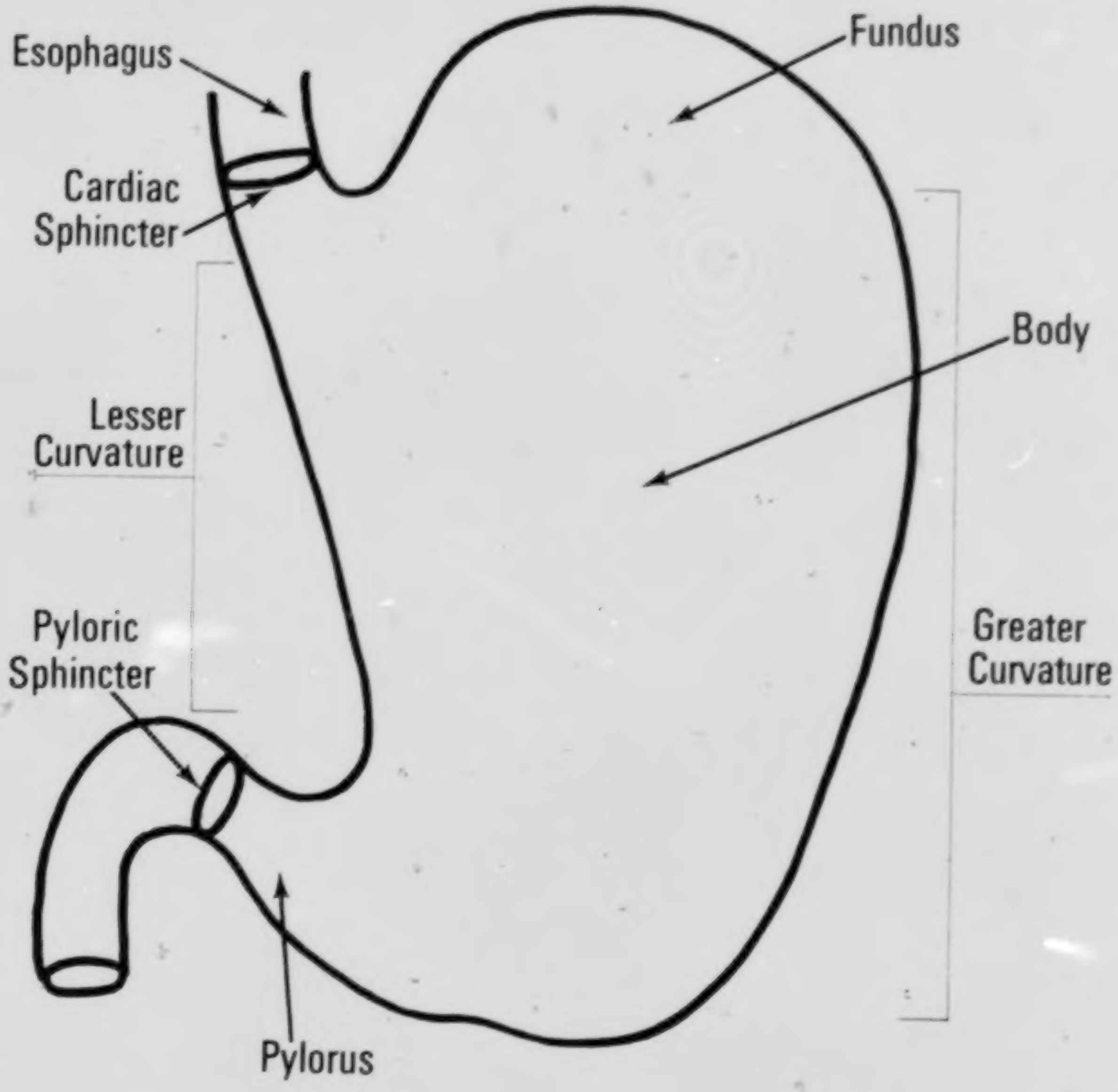
  B. Provides a site for bacteria which produce Vitamin K and other bacteria that aid in absorption

  C. Secretes mucus to aid in the movement of feces

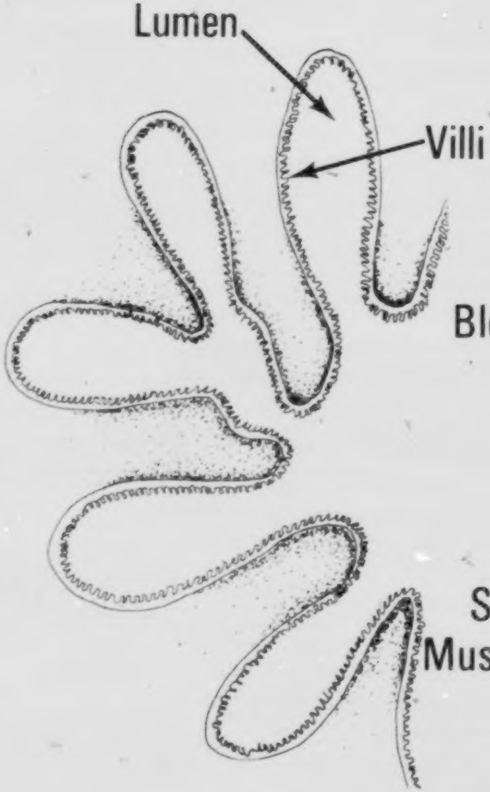
The Digestive Organs

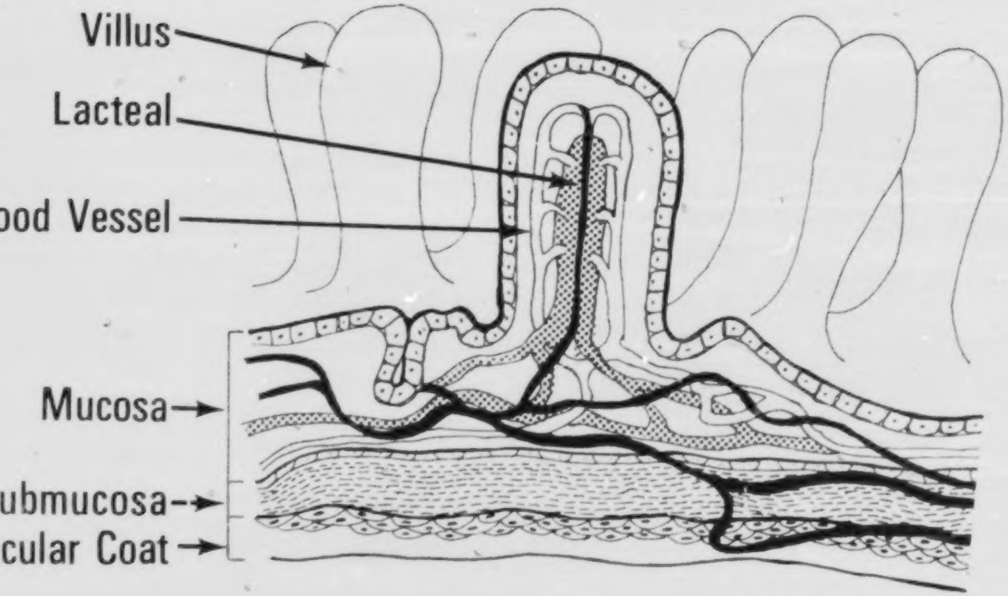

Parotid Gland
Pharynx
Epiglottis
Esophagus
Oral Cavity (mouth)
Sublingual Gland
Submaxillary Gland
Stomach
Liver
Gall Bladder
Pancreas
Colon
Small Intestine
Cecum
Sigmoid
Appendix
Rectum
Anal Canal

Parts of the Stomach


Esophagus
Fundus
Cardiac Sphincter
Body
Lesser Curvature
Greater Curvature
Pyloric Sphincter
Pylorus

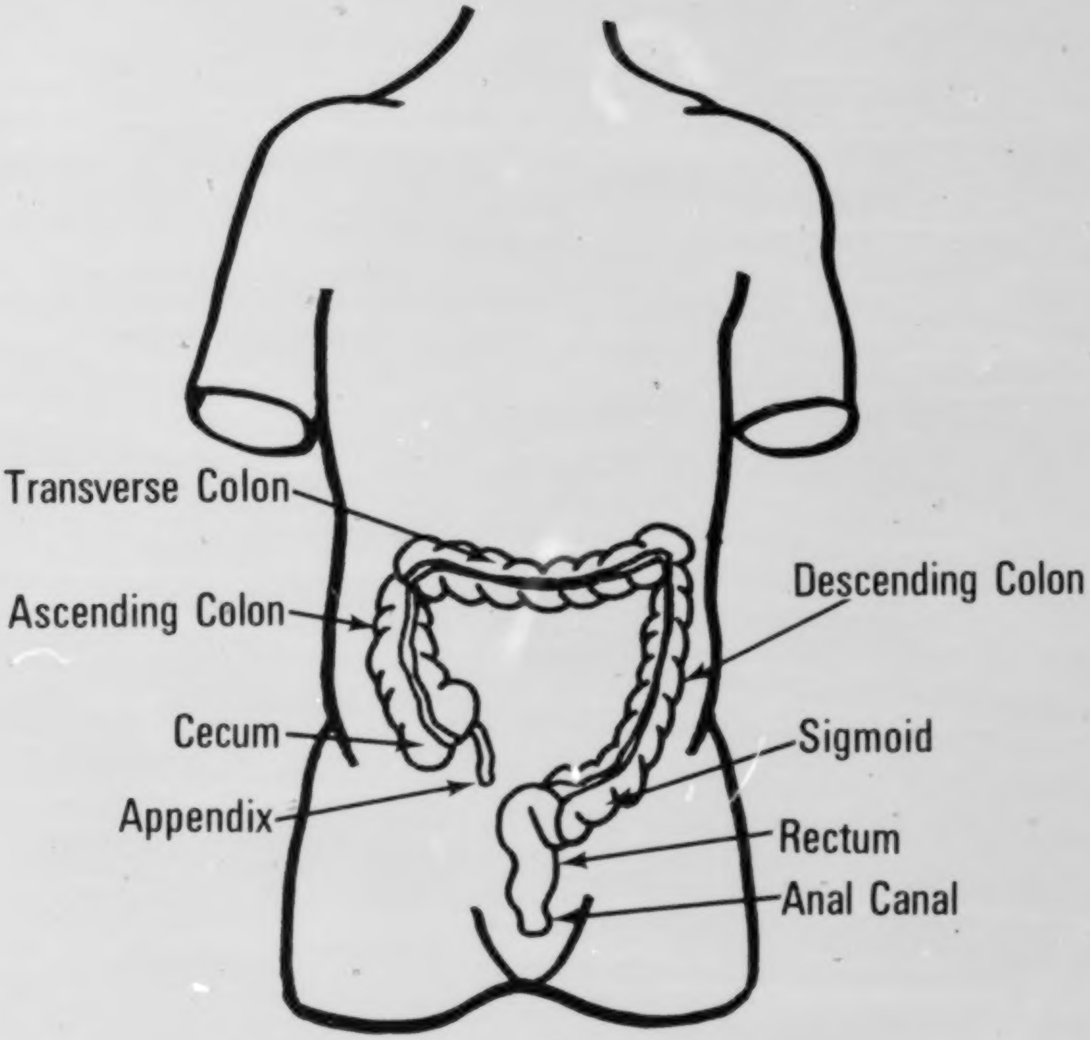
Structure of the Villi


Lumen
Villi


Villus
Lacteal
Blood Vessel
Mucosa
Submucosa
Muscular Coat

SMALL INTESTINE VILLUS STRUCTURE
(Cross Section)

Parts of the Large Intestine


Transverse Colon
Ascending Colon
Cecum
Appendix
Descending Colon
Sigmoid
Rectum
Anal Canal

THE DIGESTIVE SYSTEM: THE ALIMENTARY CANAL
UNIT VII

TEST

1. Match the terms on the right to the correct definition.

_____a. Nearly liquid mixture of partly digested food and digestive secretions found in the stomach and small intestine

_____b. Thick, sticky fluid secreted by some membranes and glands

_____c. Ringlike muscle fibers which control an outlet, permitting it to open and close

_____d. Mucoprotein found in gastric juice; necessary for the assimilation of Vitamin B_{12}

_____e. Study of the digestive system

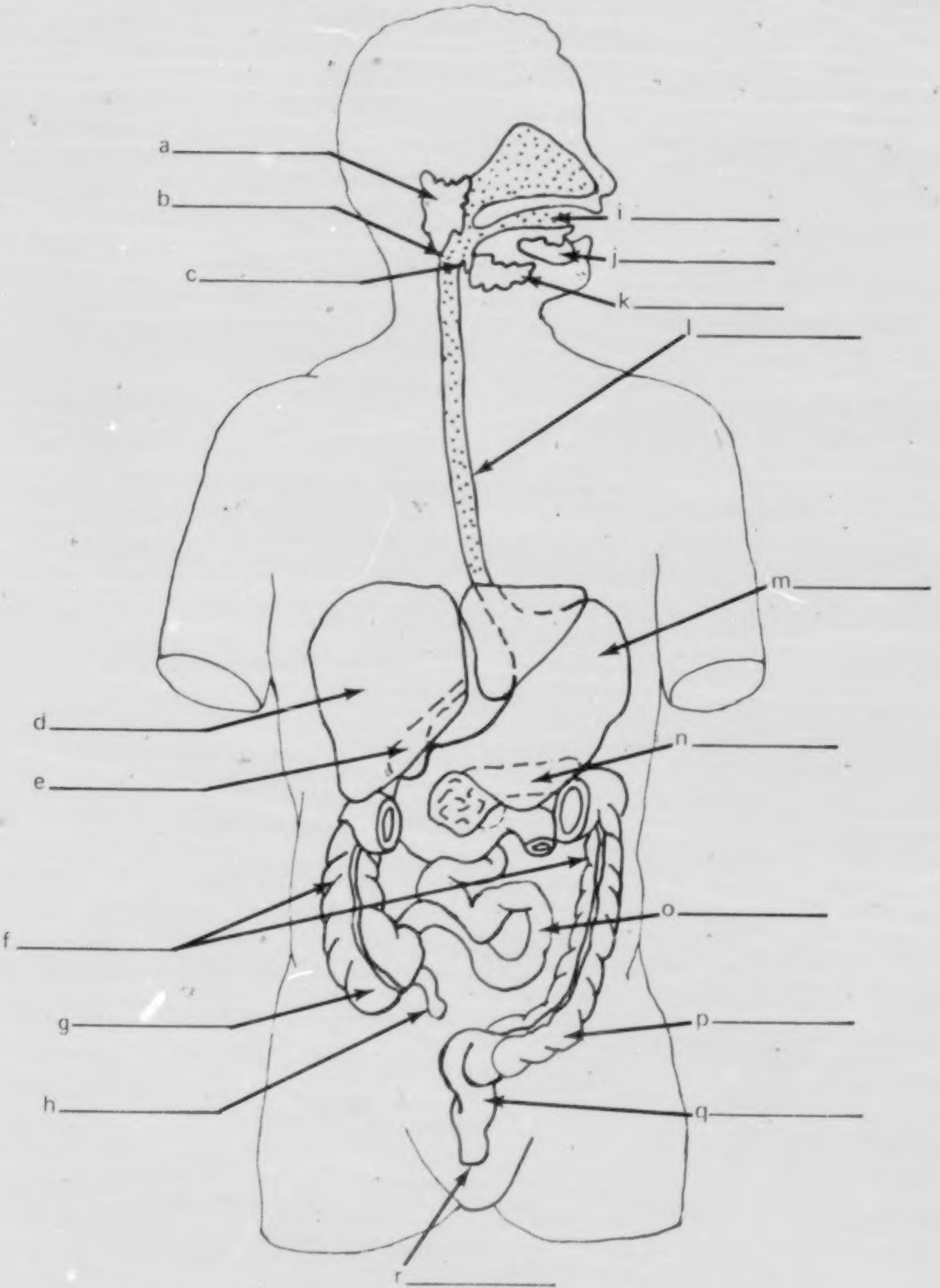
_____f. Physical and chemical breakdown of complex foodstuffs into simpler substances which are absorbed into the blood and lymph systems or eliminated from the body

_____g. Rhythmical waves of contraction which move food along the gastrointestinal tract

_____h. Short, vascular, threadlike projections covering the mucous membrane of the small intestine

1. Digestion
2. Mucus
3. Intrinsic factor
4. Villi
5. Sphincter
6. Chyme
7. Peristalsis
8. Gastroenterology

2. Identify the digestive organs on the following diagram by writing the correct names on the blanks.


a
b
c
i
j
k
l
m
d
e
n
f
o
g
p
h
q
r

3. Distinguish between the organs of the alimentary canal and the accessory organs by placing an "X" to the left of the accessory organs.

______a. Pharynx

______b. Stomach

______c. Teeth

______d. Salivary glands

______e. Oral cavity

______f. Tongue

______g. Liver

______h. Appendix

______i. Small intestine

______j. Gallbladder

4. List five structures of the mouth.

a.

b.

c.

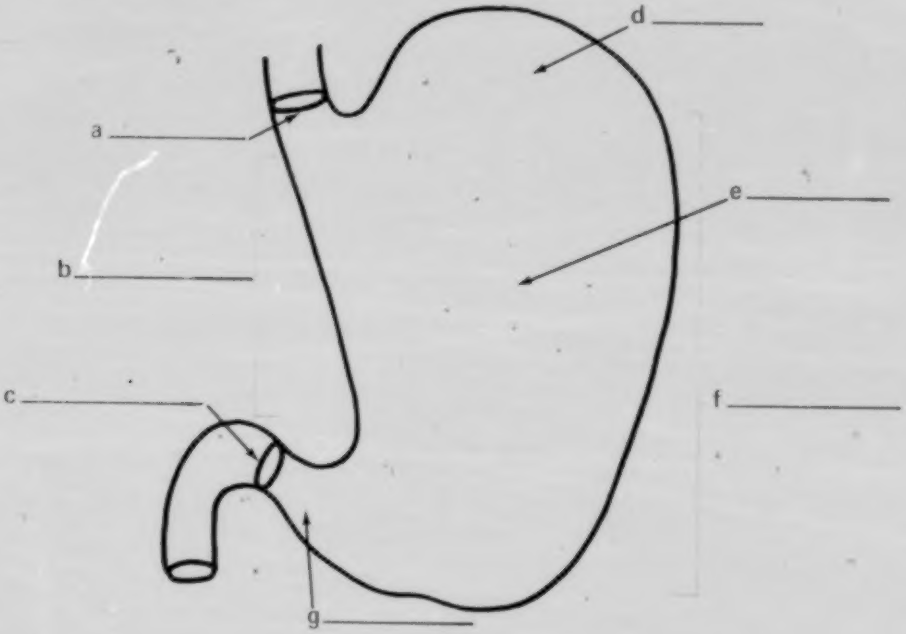
d.

e.

5. Describe the functions of the mouth.

6. Describe the structure and functions of the esophagus.

7. Identify the parts of the stomach on the following diagram by writing the correct names on the blanks.



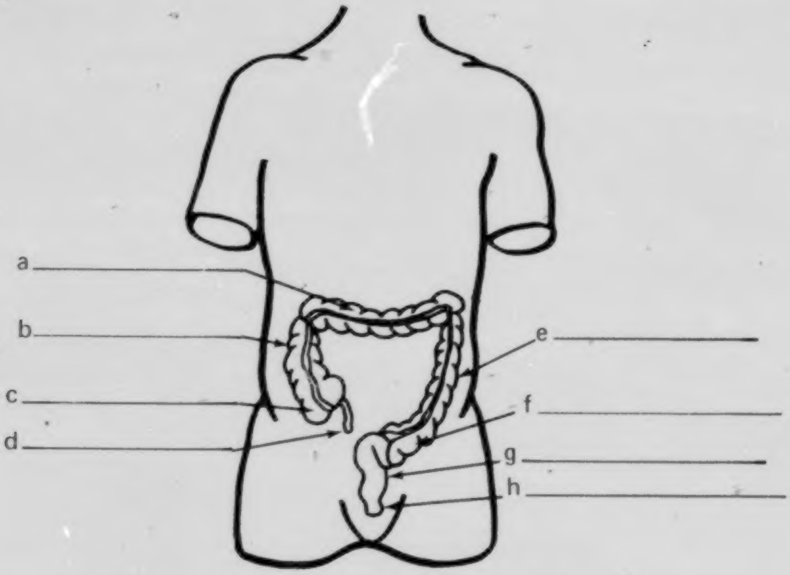
8. Discuss the functions of the stomach.

9. List the functions of the components of gastric juice.
   - a. Water
   - b. Intrinsic factor
   - c. Mucin
   - d. Hydrochloric acid
   - e. Enzymes

10. Describe the structure of the small intestine.

11. Discuss the functions of the small intestine.

12. Identify the parts of the large intestine on the following diagram by writing the correct names on the blanks.



13. Discuss the functions of the large intestine.

THE DIGESTIVE SYSTEM: THE ALIMENTARY CANAL
UNIT VII

ANSWERS TO TEST

1. a. 6
   b. 2
   c. 5
   d. 3
   e. 8
   f. 1
   g. 7
   h. 4
2. a. Parotid gland
   b. Pharynx
   c. Epiglottis
   d. Liver
   e. Gallbladder
   f. Colon
   g. Cecum
   h. Appendix
   i. Oral cavity
   j. Sublingual gland
   k. Submaxillary gland
   l. Esophagus
   m. Stomach
   n. Pancreas
   o. Small intestine

- p. Sigmoid
- q. Rectum
- r. Anal canal

3. c

   d

   f

   g

   h

   j

4. Any five of the following
   - a. Tongue
   - b. Cheeks
   - c. Hard palate
   - d. Soft palate
   - e. Teeth
   - f. Pharynx
   - g. Salivary glands

5. Description should include:
   - a. Softens, chews, and mixes food with saliva (physical change)
   - b. Begins digestive process (chemical change)
   - c. Changes some starches to sugars
   - d. Secretes approximately 1500 cc of saliva daily

6. Description should include:
   - a. Tubular passageway for food from mouth to stomach
   - b. Secretes mucus to aid in food movement
   - c. Peristalsis begins in esophagus
   - d. Epiglottis prevents food from entering the trachea.

7. a. Cardiac sphincter
   b. Lesser curvature
   c. Pyloric sphincter
   d. Fundus
   e. Body
   f. Greater curvature
   g. Pylorus

8. Discussion should include:
   a. Prepares food for digestion by changing it from a solid to a semi-fluid material (chyme) by peristalsis
   b. Serves as a reservoir for food for the three or four hours needed for proper mixing
   c. Secretes approximately 2000 cc of gastric juice per day
   d. Begins digestion of proteins

9. a. Water--A solvent
   b. Intrinsic factor--Aids in absorption of Vitamin B_{12}
   c. Mucin--Mixture of proteins in mucus that protects the lining of the stomach
   d. Hydrochloric acid
      1) Softens connective tissue in meat
      2) Kills bacteria
      3) Aids in absorption of iron
      4) Activates at least one of the stomach enzymes
   e. Enzymes--Act chemically to aid digestion

10. Description should include:
   a. Small tube about one inch in diameter and twenty feet long
   b. Divided into three parts
      1) Duodenum
      2) Jejunum
      3) Ileum
   c. Lined with permanent folds covered with villi

11. Discussion should include:
    a. Bile from the liver and pancreatic juice are emptied into the duodenum
    b. Intestinal juices are secreted in the small intestine
    c. Greater part of digestion and absorption of food occurs
12. a. Transverse colon
    b. Ascending colon
    c. Cecum
    d. Appendix
    e. Descending colon
    f. Sigmoid
    g. Rectum
    h. Anal canal
13. Discussion should include:
    a. Reabsorbs water, mineral salts, and vitamins
    b. Provides a site for bacteria which produce Vitamin K and other bacteria that aid in absorption
    c. Secretes mucus to aid in the movement of feces

THE DIGESTIVE SYSTEM: ACCESSORY ORGANS AND DIGESTION
UNIT VIII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to match terms and definitions associated with the digestive system. The student should be able to list, describe, and discuss the functions of the various accessory organs of the digestive system and describe the digestive process. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with accessory digestive organs to the correct definition.
2. Name the function of the teeth.
3. Identify the parts of a tooth and adjacent structures on a diagram.
4. List the two sets of teeth and the number of each.
5. List the four types of teeth.
6. Discuss the functions of the salivary glands.
7. List the salivary glands giving their location.
8. Identify the liver, pancreas, and adjacent structures on a diagram.
9. Describe the structure of the liver.
10. List six functions of the liver.
11. Name the function of the gallbladder.
12. Discuss the function of the pancreas.
13. List one enzyme from the mouth, the stomach, and the small intestine giving what each acts upon.
14. Describe the general digestive process.
15. Discuss mechanical digestion.
16. Discuss chemical digestion.

17. List the sites of food absorption and the types of foods assimilated in each area.
18. List three classes of end products of digestion that are absorbable.
19. List seven factors necessary for maintaining the digestive system.
20. Trace the digestion of a meal.

THE DIGESTIVE SYSTEM: ACCESSORY ORGANS AND DIGESTION
UNIT VIII

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objective sheet.
- B. Provide students with information and assignment sheets.
- C. Make transparencies.
- D. Discuss terminal and specific objectives.
- E. Discuss information and assignment sheets.
- F. Give test.

II. Student:

- A. Read objectives.
- B. Study information sheet and transparencies.
- C. Participate in discussions.
- D. Complete assignment sheet.
- E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Transparency masters
    1. TM 1--Structure of a Molar
    2. TM 2--Deciduous Teeth and Permanent Teeth
    3. TM 3--The Salivary Glands
    4. TM 4--The Liver, Gallbladder, and Pancreas
- D. Assignment Sheet #1--The Digestive Process

   - E. Answers to assignment sheet
   - F. Test
   - G. Answers to test

II. References:

   - A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.
   - B. Manner, Harold W. *Elements of Anatomy and Physiology.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1962.
   - C. Memmler, Ruth and Ruth Rada. *The Human Body in Health and Disease.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1970.
   - D. Thomas, Vivian. *Life Sciences for Health Technologies.* Los Angeles, California: Technicourse, Inc., 1970.
   - E. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.
   - F. Brigley, Catherine M. *Pediatrics for the Practical Nurse.* Albany 5, New York: Delmar Publishers, Inc., 1966 (Revised).

III. Additional materials:

   - A. Films
      1. "Exploring the Body--Digestive System," State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1515 West Sixth Avenue, Stillwater, Oklahoma 74074.
      2. "The Human Body: Digestive System," Oklahoma State Department of Health.
      3. "Nutritional Needs of Our Body," Oklahoma State Department of Health.
      4. "The Human Body: Excretory System," Coronet Films.
   - B. Filmstrip--"The Digestive System," Robert J. Brady Company.

THE DIGESTIVE SYSTEM: ACCESSORY ORGANS AND DIGESTION
UNIT VIII

INFORMATION SHEET

I. Terms and definitions

   A. Diaphragm--Muscular membrane that separates the abdominal cavity from the thoracic cavity

   B. Fibrinogen--Protein in the blood which aids in clotting

   C. Albumin--One of the simple proteins

   D. Toxin--Any poisonous substance of microbic, vegetable, mineral, or animal origin

   E. Cholesterol--Organic fatlike compound found in animal fat, bile, blood, brain tissue, liver, and other parts of the body.

   F. Antibody--Protein substance in the blood developed by the body usually in reaction to a specific foreign substance

   G. Feces--Body waste, such as food residue, bacteria, epithelium, and mucus discharged from the intestines

   H. Carbohydrates--Starches and sugars

   I. Hormone--Chemical substance, secreted by an endocrine gland, which regulates the functions of other organs

   J. Exocrine--External secretion of a gland

   K. Endocrine--Internal secretion of a gland

II. Function of teeth--Cutting and grinding the food

III. Structure of a tooth (Transparency 1)

   A. Regions

      1. Crown--Above the gumline

      2. Neck--Below the gumline

      3. Root--Embedded in the bone

   B. Layers

      1. Enamel--Covers the crown

INFORMATION SHEET

2. Dentin--Surrounds the pulp cavity

3. Pulp cavity--Soft part containing nerves and blood vessels

C. Other structures

1. Cementum--Covers tooth under gumline

2. Peridontal tissue--Connects tooth to jawbone

IV. Sets of teeth (Transparency 2)

A. Deciduous--20

(NOTE: These begin to appear about sixth month.)

B. Permanent--32

(NOTE: During childhood the permanent teeth replace the deciduous or baby teeth.)

V. Types of teeth--Teeth are shaped according to function (Transparency 2)

A. Incisors

(NOTE: These are teeth with thin edges which act as chisels in cutting food.)

B. Cuspids

(NOTE: These are thin and pointed teeth which tear or shred food. They are also called canines or eye teeth.)

C. Bicuspids

(NOTE: These are small and square teeth, with irregular surfaces, which crush and grind food. They are also called premolars.)

D. Molars

(NOTE: These are larger teeth with more surface; they also crush and grind food.)

VI. Functions of the salivary glands

A. Secrete about 1500 cc of saliva daily

B. Saliva moistens food, aids in chewing and swallowing

C. Begin change of starches to sugar

INFORMATION SHEET

VII. The salivary glands (Transparency 3)

  A. Parotid--Located below and in front of the ears

  B. Sublingual--Located below the tip of the tongue

  C. Submaxillary--Located under the back of the tongue

VIII. Liver, pancreas, and adjacent structures (Transparency 4)

  A. Liver

  B. Hepatic duct

  C. Gallbladder

  D. Cystic duct

  E. Common bile duct

  F. Pancreas

  G. Pancreatic duct

  H. Duodenum

IX. Structure of the liver (Transparency 4)

  A. Largest organ in the body

  (NOTE: It weighs about three pounds.)

  B. Made up of two major lobes

  (NOTE: The right lobe is the larger.)

  C. Located directly under the diaphragm, mainly on the right side of the body

X. Functions of the liver

  A. Metabolism of carbohydrates, fats, and proteins

  B. Manufacture of blood proteins such as fibrinogen and albumin

  C. Removal of toxins, bacteria, and worn-out red blood cells from the blood

  D. Removal of waste products from the blood

  E. Manufacture of cholesterol

INFORMATION SHEET

F. Storage of vitamins A, D, K, B_{12}

G. Formation of antibodies which protect against disease

H. Storage of simple sugars

I. Manufacture of bile which is essential to the metabolism of fats

XI. Function of the gallbladder--Stores and concentrates bile until it is needed for digestion

XII. Function of the pancreas (Transparency 4)

A. Production of pancreatin, an exocrine secretion which is emptied into the duodenum

B. Production of insulin, an endocrine secretion or hormone secreted into the blood stream

XIII. Principal digestive enzymes

A. Mouth--Ptyalin in saliva begins digestion of starches

B. Stomach--Gastric juice including hydrochloric acid

1. Pepsin begins digestion of proteins

2. Lipase acts upon emulsified fats

3. Rennin acts upon milk protein

C. Small intestine

1. Bile from liver emulsifies fats

(NOTE: Bile is not an enzyme but is essential to digestion of fats.)

2. Trypsin from pancreas digests proteins

3. Amylopsin from pancreas digests starches

4. Steapsin from pancreas digests fats

5. Erepsin from intestinal lining digests proteins

6. Lactase, maltase, and sucrase digest sugars

INFORMATION SHEET

XIV. Digestion

A. Foods must be broken down by mechanical and chemical means into their simplest components to be absorbed by the blood and used by the cells

B. Fecal material consisting of undigested foods, bacteria, mucus, and water must be eliminated from the alimentary canal

C. Three types of food substances are digestible

1. Carbohydrates
2. Fats
3. Proteins

D. Cellulose or roughage is indigestible, but it is needed to add bulk to the diet and aid in mechanical digestion

E. Vitamins, minerals, and water are ready for use when taken

XV. Mechanical digestion

A. Breaks foods into smaller particles

B. Moistens and mixes food with digestive juices

C. Moves food along the digestive tract

D. Begins in the mouth with chewing and continues along the alimentary tract with swallowing in the esophagus and peristalsis in the stomach and small intestine

E. Muscles in the tongue, jaw, pharynx, esophagus, stomach, and intestines furnish the needed power

F. Chyme is absorbed through the villi in the small intestine into the blood and lymph systems

XVI. Chemical digestion

A. Digestive juices and enzymes cause chemical changes in the food

B. Carbohydrates are changed to simple sugars in the mouth and small intestine

C. Fats are turned into fatty acids in the stomach and small intestine

D. Proteins are changed into amino acids in the stomach and small intestine

INFORMATION SHEET

XVII. Sites of absorption of foods

- A. Stomach--Alcohol, some drugs, and small amounts of water and glucose
- B. Small intestine--Approximately ninety percent of food absorption through the villi

  (NOTE: Digested food is transported to the liver through the portal vein and lymphatic capillaries.)

- C. Large intestine--Water, mineral salts, and vitamins

XVIII. Absorbable end products of digestion

- A. Monosaccharides from carbohydrates

  Examples: Glucose, fructose, maltose, lactose

- B. Amino acids from proteins
- C. Fatty acids and glycerol from fats

XIX. Maintaining the digestive system

- A. Proper care of mouth and teeth
- B. Adequate diet including the basic four food requirements
- C. Adequate elimination through good elimination habits, proper diet, fluids, and exercise
- D. Use of medication only as prescribed
- E. Proper handling of foods including cleanliness, refrigeration, and cooking
- F. Careful washing of hands before handling or preparing foods and after using toilet
- G. Clean source of water
- H. Control of flies and other pests

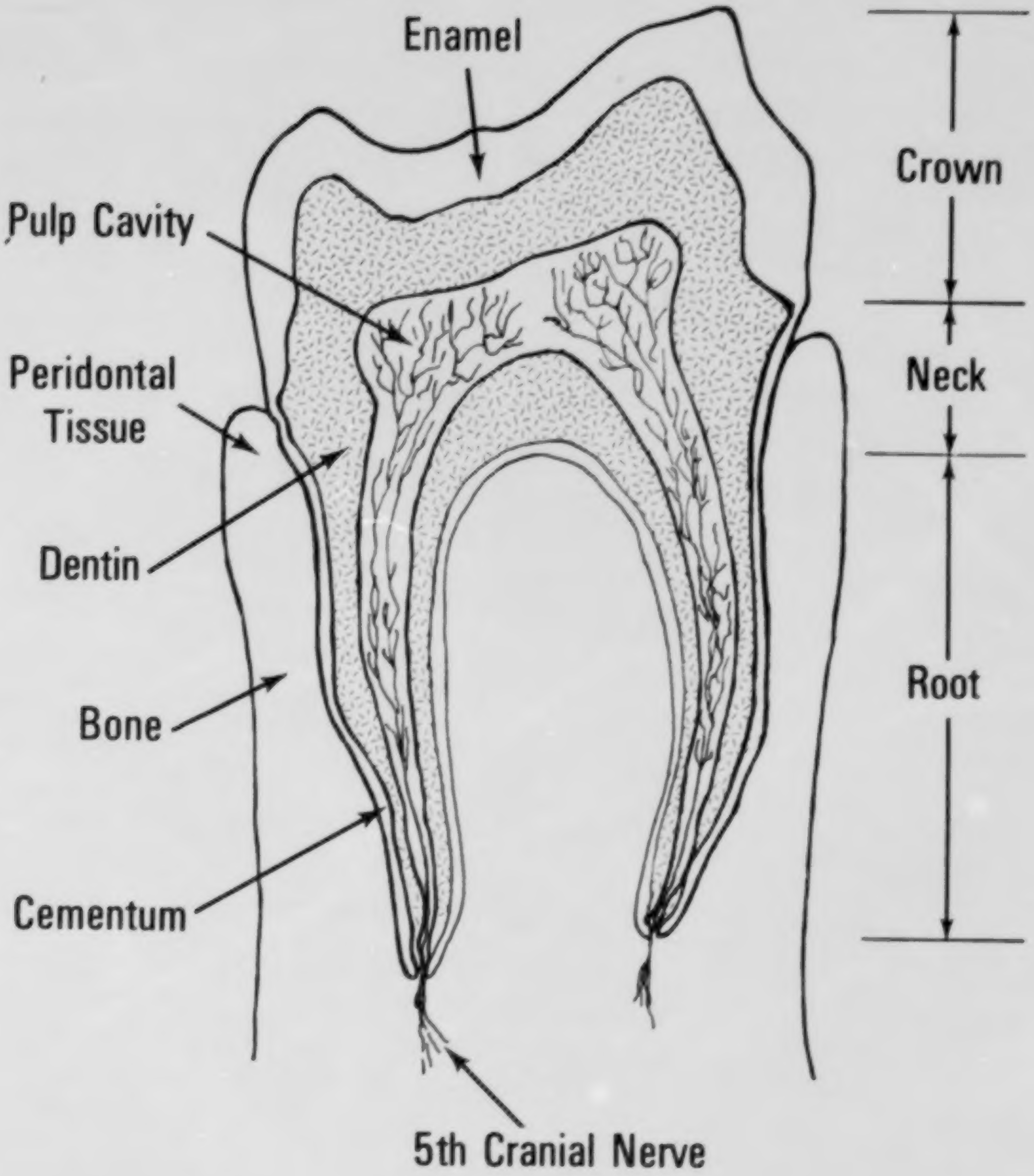
  (NOTE: Bacteria which more or less constantly inhabit the intestine of man or animals or both will grow readily in many common foods such as milk, sandwich fillings, and salad dressings. They can be transmitted by insects, rodents, and larger animals, including man, from contaminated to clean sources. It is possible for a person to become a permanent carrier of a disease causing organism without having any symptoms of the illness.)

INFORMATION SHEET

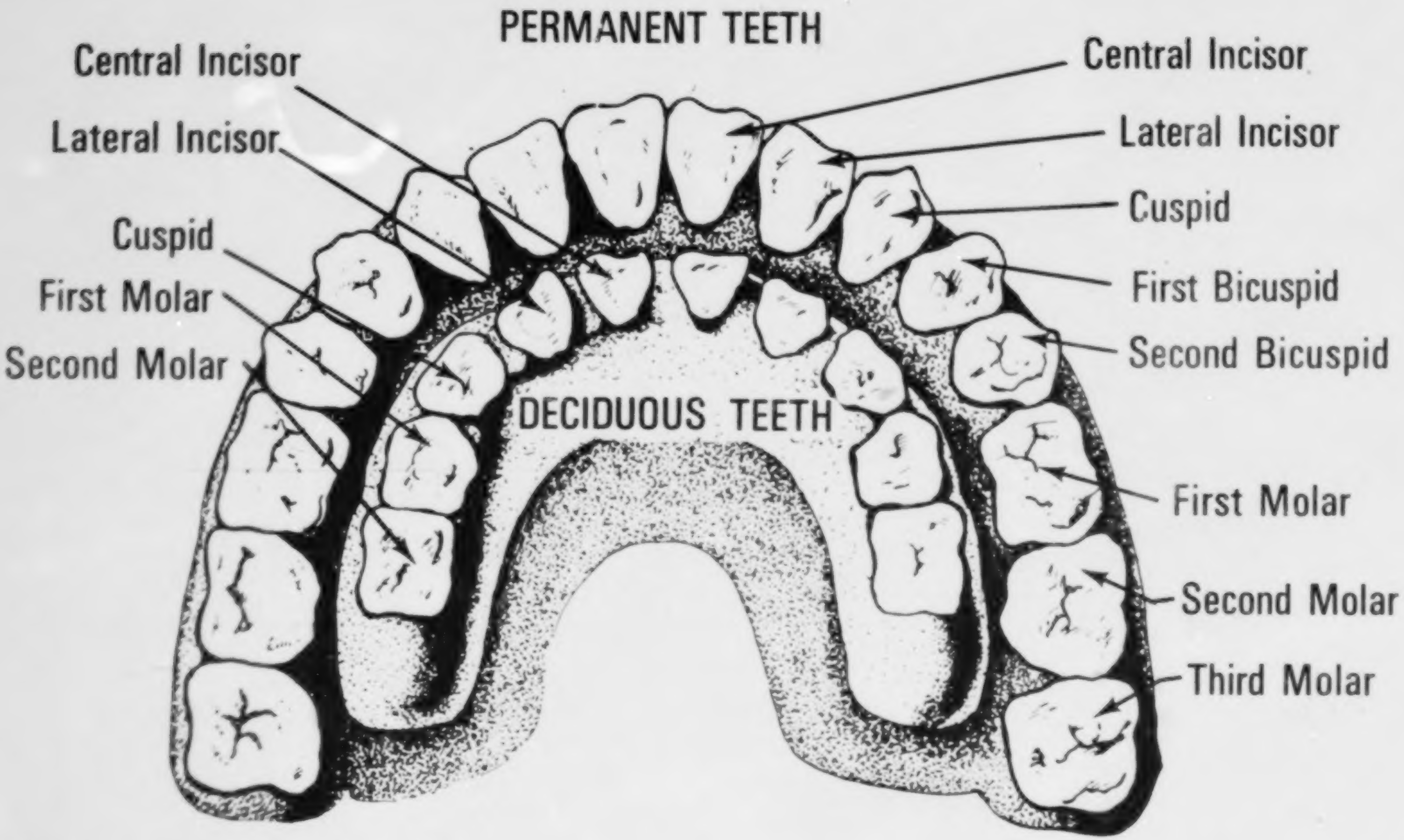
I. Moderate use of spices and other irritating substances to prevent irritation of lining of digestive tract

J. Maintenance of good tone in abdominal muscles by exercise and good posture

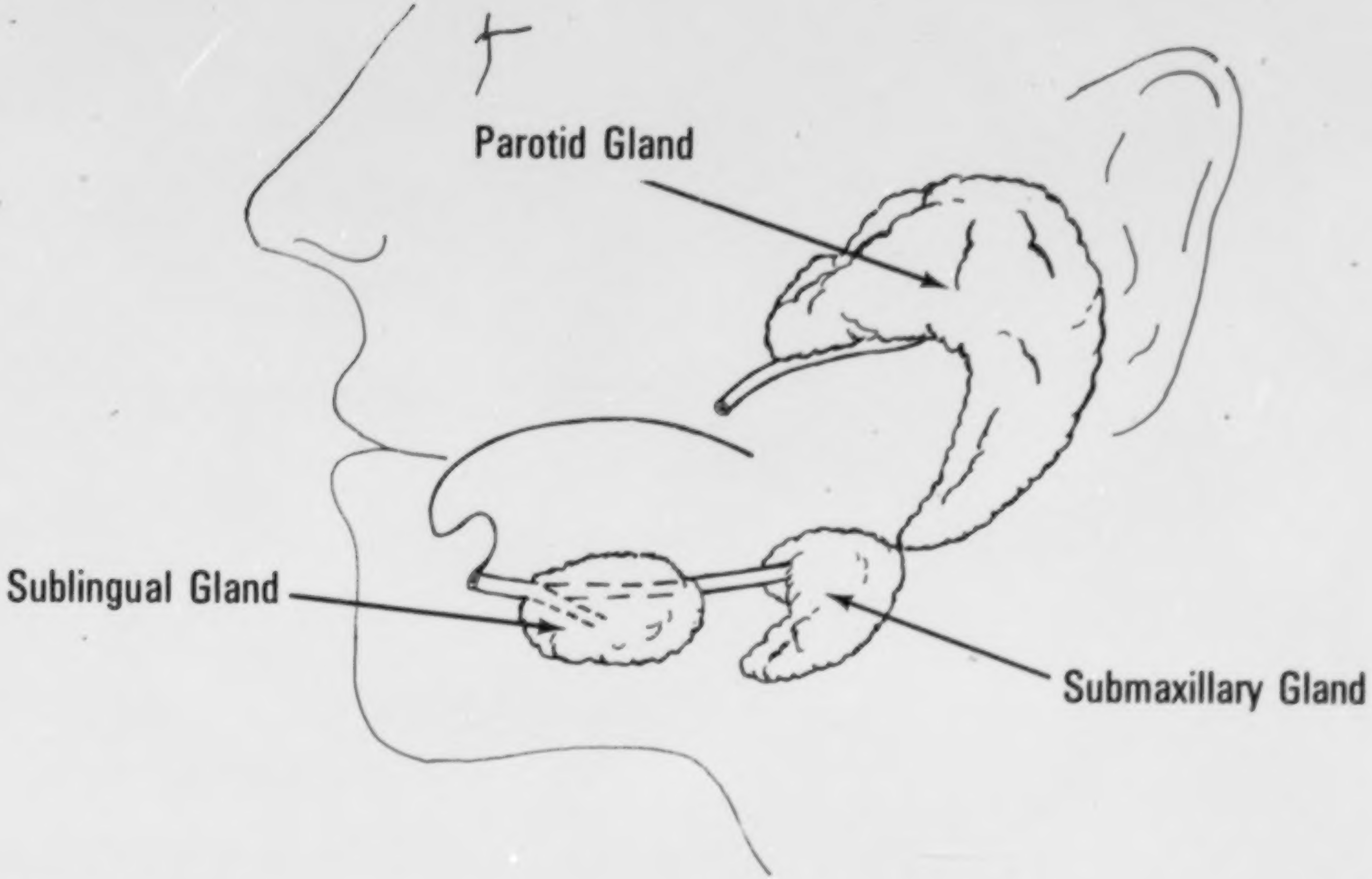
Structure of a Molar


Enamel
Pulp Cavity
Peridontal Tissue
Dentin
Bone
Cementum
5th Cranial Nerve
Crown
Neck
Root

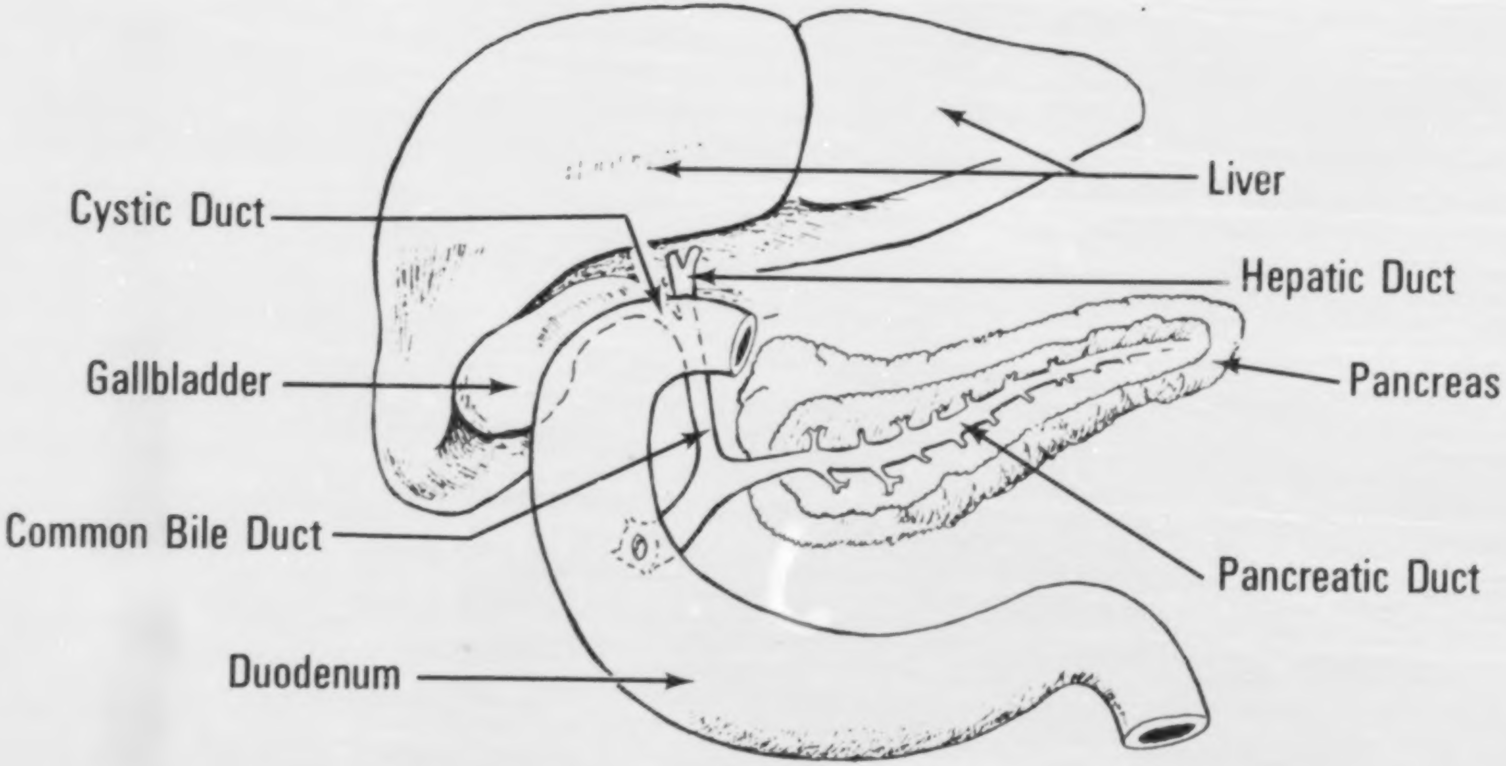
Deciduous Teeth and Permanent Teeth


PERMANENT TEETH
Central Incisor
Lateral Incisor
Cuspid
First Molar
Second Molar
Central Incisor
Lateral Incisor
Cuspid
First Bicuspid
Second Bicuspid
First Molar
Second Molar
Third Molar
DECIDUOUS TEETH

The Salivary Glands


Parotid Gland
Sublingual Gland
Submaxillary Gland

The Liver, Gallbladder, and Pancreas


Liver
Cystic Duct
Hepatic Duct
Gallbladder
Pancreas
Common Bile Duct
Pancreatic Duct
Duodenum

THE DIGESTIVE SYSTEM: ACCESSORY ORGANS AND DIGESTION
UNIT VIII

ASSIGNMENT SHEET #1--THE DIGESTIVE PROCESS

Trace the digestion of a meal consisting of a starch, milk, a protein, and fat through the digestive tract. Explain how food changes as it moves along the digestive tract giving how and where it is absorbed into the circulatory system.

THE DIGESTIVE SYSTEM: ACCESSORY ORGANS AND DIGESTION
UNIT VIII

ANSWERS TO ASSIGNMENT SHEET #1

I. Mouth--Both mechanical and chemical digestion occur. Mechanically, the larger food particles are ground by the teeth into smaller food particles. Chemically, the food is mixed with saliva containing ptyalin which acts upon the starches changing them to simpler sugars.

II. Stomach--In the stomach the food is mixed with gastric juice containing rennin, pepsin, hydrochloric acid, and lipase. The rennin acts upon the liquid protein in milk turning it into a solid protein which is then acted upon as other solid proteins. The enzyme pepsin is activated by hydrochloric acid and acts upon solid proteins changing them into partially digested proteins. Lipase begins the digestion of fats, changing them to fatty acids and glycerol. As the food is churned, the entire mass is reduced to chyme which passes at intervals into the small intestine. Digestion of starches ceases while food is in the stomach.

III. Small intestine

  A. In the duodenum, bile acts upon the larger droplets of fat splitting them into smaller droplets. The pancreatic enzymes are secreted into the duodenum also and continue the digestion begun in the mouth and stomach. Trypsin acts upon proteins, steapsin acts upon the smaller fat droplets, and amylopsin begins the digestion of starches.

  B. In the small intestine, jejunum, and ileum, erepsin completes the digestion of protein to amino acids, sucrase changes sugars into simple sugars, lactase converts milk sugar to lactose, and maltase changes malt sugar to maltose.

  C. Most of the absorption of digested food particles is completed in the small intestine.

IV. Large intestine--Water, bile salts, and vitamins are absorbed. Waste products (feces) are moved on and eliminated.

THE DIGESTIVE SYSTEM: ACCESSORY ORGANS AND DIGESTION
UNIT VIII

TEST

1. Match the terms on the right to the correct definition.

_____a. Muscular membrane that separates the abdominal cavity from the thoracic cavity

_____b. Internal secretion of a gland

_____c. Protein in the blood which aids in clotting

_____d. External secretion of a gland

_____e. One of the simple proteins

_____f. Chemical substance, secreted by an endocrine gland, which regulates the functions of other organs

_____g. Any poisonous substance of microbic, vegetable, mineral, or animal origin

_____h. Starches and sugars

_____i. Organic fatlike compound found in animal fat, bile, blood, brain tissue, liver, and other parts of the body

_____j. Body waste, such as food residue, bacteria, epithelium, and mucus discharged from the intestines

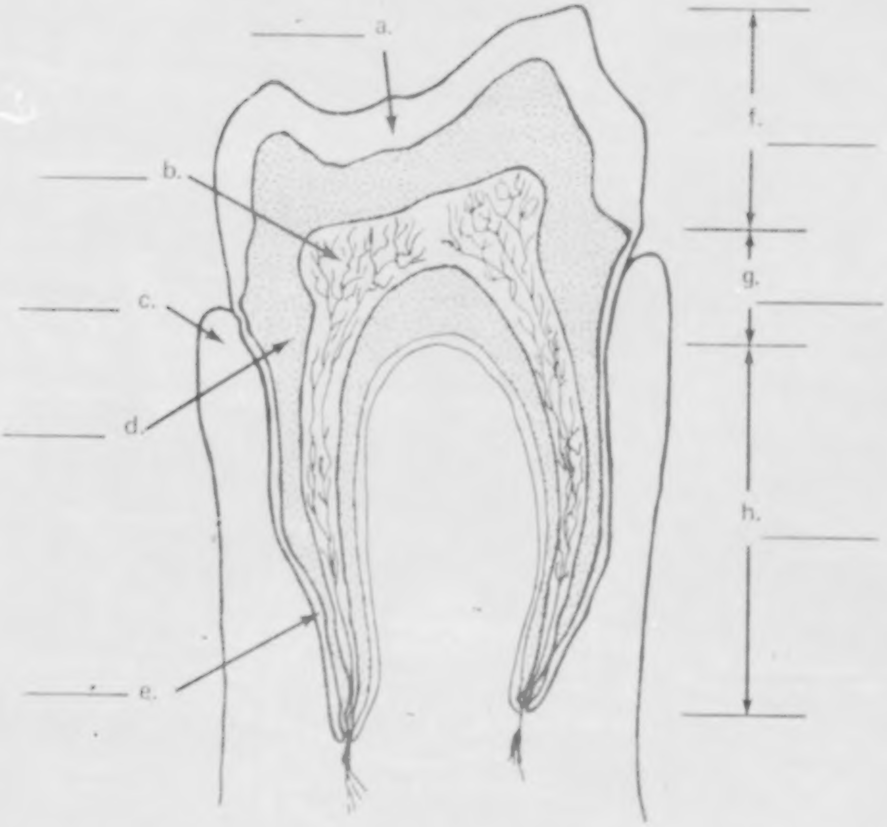
_____k. Protein substance in the blood developed by the body usually in reaction to a specific foreign substance

1. Cholesterol
2. Carbohydrates
3. Endocrine
4. Fibrinogen
5. Toxin
6. Feces
7. Exocrine
8. Antibody
9. Albumin
10. Diaphragm
11. Hormone

2. Name the function of the teeth.

3. Identify the parts of a tooth and adjacent structures by writing the correct number on the blanks.

1. Cementum	5. Pulp Cavity
2. Neck	6. Dentin
3. Enamel	7. Crown
4. Root	8. Peridontal Tissue



4. List the two sets of teeth and the number of each.

a.

b.

5. List the four types of teeth.

   a.

   b.

   c.

   d.

6. Discuss the functions of the salivary glands.

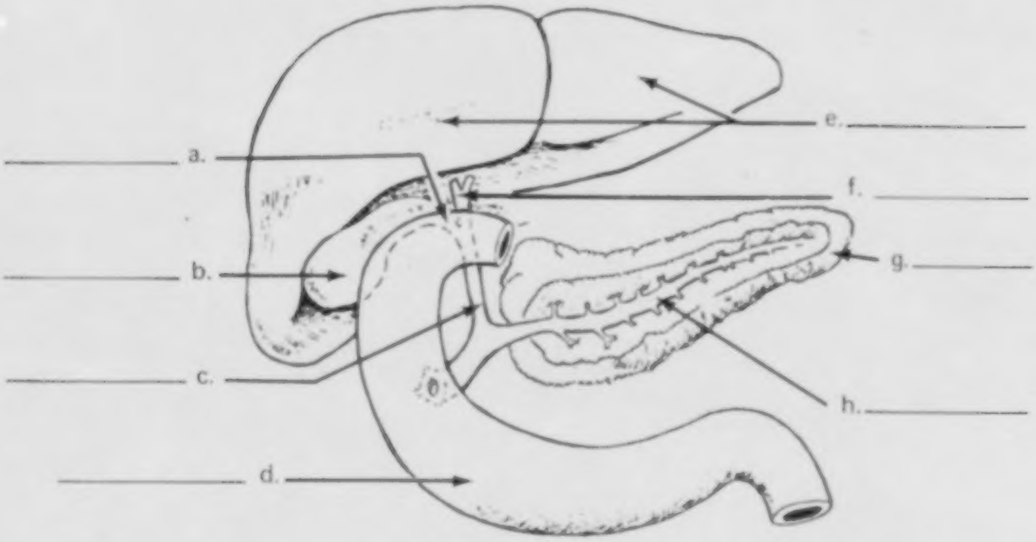
7. List the salivary glands giving their location.

   a.

   b.

   c.

8. Identify the liver, pancreas, and adjacent structures on the diagram by writing the correct name on the blanks.



9. Describe the structure of the liver.

10. List six functions of the liver.

    a.

    b.

    c.

    d.

    e.

    f.

11. Name the function of the gallbladder.

12. Discuss the function of the pancreas.

13. List one enzyme from the mouth, the stomach, and the small intestine giving what each acts upon.

    a. Mouth

    b. Stomach

    c. Small intestine

14. Describe the general digestive process.

15. Discuss mechanical digestion.

16. Discuss chemical digestion.

17. List the sites of food absorption and the types of foods assimilated in each area.

    a.

    b.

    c.

18. List three classes of end products of digestion that are absorbable.

    a.

    b.

    c.

19. List seven factors necessary for maintaining the digestive system.

    a.

    b.

    c.

    d.

    e.

    f.

    g.

20. Trace the digestion of a meal.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

THE DIGESTIVE SYSTEM: ACCESSORY ORGANS AND DIGESTION
UNIT VIII

ANSWERS TO TEST

1. a. 10
   b. 3
   c. 4
   d. 7
   e. 9
   f. 11
   g. 5
   h. 2
   i. 1
   j. 6
   k. 8
2. Cutting and grinding the food
3. a. 3
   b. 5
   c. 8
   d. 6
   e. 1
   f. 7
   g. 2
   h. 4
4. a. Deciduous--20
   b. Permanent--32

5. a. Incisors
   b. Cuspids
   c. Bicuspids
   d. Molars

6. Discussion should include:
   a. Secrete about 1500 cc of saliva daily
   b. Saliva moistens food, aids in chewing and swallowing
   c. Begin change of starches to sugar

7. a. Parotid--Located below and in front of the ears
   b. Sublingual--Located below the tip of the tongue
   c. Submaxillary--Located under the back of the tongue

8. a. Cystic duct
   b. Gallbladder
   c. Common bile duct
   d. Duodenum
   e. Liver
   f. Hepatic duct
   g. Pancreas
   h. Pancreatic duct

9. Description should include:
   a. Largest organ in the body
   b. Made up of two major lobes
   c. Located directly under the diaphragm, mainly on the right side of the body

10. Any six of the following
   a. Metabolism of carbohydrates, fats, and proteins
   b. Manufacture of blood proteins such as fibrinogen and albumin

c. Removal of toxins, bacteria, and worn-out red blood cells from the blood

d. Removal of waste products from the blood

e. Manufacture of cholesterol

f. Storage of vitamins A, D, K, B_{12}

g. Formation of antibodies which protect against disease

h. Storage of simple sugars

i. Manufacture of bile which is essential to the metabolism of fats

11. Stores and concentrates bile until it is needed for digestion

12. Discussion should include:

a. Production of pancreatin, an exocrine secretion which is emptied into the duodenum

b. Production of insulin, an endocrine secretion or hormone secreted into the blood stream

13. Include one from each section

a. Mouth--Ptyalin in saliva begins digestion of starches

b. Stomach--Gastric juice including hydrochloric acid

1) Pepsin begins digestion of protein

2) Lipase acts upon emulsified fats

3) Rennin acts upon milk protein

c. Small intestine

1) Bile from the liver emulsifies fats
2) Trypsin from pancreas digests proteins
3) Amylopsin from pancreas digests starches
4) Steapsin from pancreas digests fats
5) Erepsin from intestinal lining digests proteins
6) Lactase, maltase, and sucrase digest sugars

14. Description should include:

a. Foods must be broken down by mechanical and chemical means into their simplest components to be absorbed by the blood and used by the cells

b. Fecal material consisting of undigested foods, bacteria, mucus, and water must be eliminated from the alimentary canal

c. Three types of food substances are digestible

  1) Carbohydrates

  2) Fats

  3) Proteins

d. Cellulose or roughage is indigestible, but it is needed to add bulk to the diet and aid in mechanical digestion

e. Vitamins, minerals, and water are ready for use when taken

15. Discussion should include:

a. Breaks foods into smaller particles

b. Moistens and mixes food with digestive juices

c. Moves food along the digestive tract

d. Begins in the mouth with chewing and continues along the alimentary tract with swallowing in the esophagus and peristalsis in the stomach and small intestine

e. Muscles in the tongue, jaw, pharynx, esophagus, stomach, and intestines furnish the needed power

f. Chyme is absorbed through the villi in the small intestine into the blood and lymph systems

16. Discussion should include:

a. Digestive juices and enzymes cause chemical changes in the food

b. Carbohydrates are changed to simple sugars in the mouth and small intestine

c. Fats are turned into fatty acids in the stomach and small intestine

d. Proteins are changed into amino acids in the stomach and small intestine

17. a. Stomach-Alcohol, some drugs, and small amounts of water and glucose

b. Small intestine-Approximately ninety percent of all food absorption through the villi

c. Large intestine-Water, mineral salts, and vitamins

18. a. Monosaccharides from carbohydrates

   b. Amino acids from proteins

   c. Fatty acids and glycerol from fats

19. List should include seven of the following

   a. Proper care of mouth and teeth

   b. Adequate diet including the basic four food requirements

   c. Adequate elimination through good elimination habits, proper diet, fluids, and exercise

   d. Use of medication only as prescribed

   e. Proper handling of foods including cleanliness, refrigeration, and cooking

   f. Careful washing of hands before handling or preparing foods and after using toilet

   g. Clean source of water

   h. Control of flies and other pests

   i. Moderate use of spices and other irritating substances to prevent irritation of lining of digestive tract

   j. Maintenance of good tone in abdominal muscles by exercise and good posture

20. Evaluated to the satisfaction of the instructor.

THE BLOOD
UNIT IX

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss functions and characteristics of the blood and its components. The student will be able to match terms with definitions and normal ranges with components. The student will be able to list components of the blood, reasons for blood transfusions, and blood groups. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the blood to the correct definition.
2. Discuss three general functions of blood.
3. List three physical characteristics of blood.
4. List eight principal components of blood plasma.
5. Describe the erythrocytes.
6. Discuss characteristics of leukocytes.
7. List the two types of leukocytes.
8. Describe platelets.
9. List one function of each of the formed elements.
10. List the origin of the blood cells.
11. Discuss blood clotting in the blood vessels.
12. Discuss the mechanism of blood clotting.
13. List four reasons for blood transfusions.
14. List four blood groups.
15. Discuss the importance of determination of blood type.
16. Discuss the Rh factor.
17. List three routine blood studies.
18. List three less common blood tests.
19. Select the normal ranges of white cells, red cells, platelets, hemoglobin, and hematocrit from a given list.
20. Trace the circulation of a drop of blood throughout the body.

THE BLOOD
UNIT IX

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information sheet.

  F. Assist students in completing assignment sheet.

  G. Ask a qualified person to demonstrate drawing blood.

  H. Use a microscope, slides, or films to show plasma, leukocytes, and erythrocytes.

  I. Have demonstration of blood typing and grouping.

  J. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Complete assignment sheet.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

C. Transparency masters

1. TM 1--Relationship Between Cellular and Intercellular Fluid
2. TM 2--Composition of Blood
3. TM 3--Erythrocytes
4. TM 4--Ameboid Action of Leukocytes
5. TM 5--White Blood Cells
6. TM 6--Blood Clot
7. TM 7--Blood Typing

D. Assignment Sheet #1--Circulation of Blood

E. Test

F. Answers to test

II. References:

A. Frobisher, Martin, Lucille Sommermeyer, and Robert Fuerst. *Microbiology in Health and Disease*. Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Manner, Harold W. *Elements of Anatomy and Physiology*. Philadelphia, Pennsylvania: W. B. Saunders Company, 1962.

C. Memmler, Ruth and Ruth Rada. *The Human Body in Health and Disease*. Philadelphia, Pennsylvania: J. B. Lippincott Company, 1970.

D. Reith, Edward J., Bertha Breidenbach, and Mary Lorenc. *Textbook of Anatomy and Physiology*. New York: McGraw-Hill Book Company, 1964.

E. Thomas, Virginia E. *Life Sciences for Health Technologies*. Los Angeles, California: Technicourse, Inc., 1970.

III. Additional materials:

A. Films

1. "The Blood," Oklahoma State Department of Health.
2. "Hemo the Magnificent," Oklahoma State Department of Health or the Bell Telephone System.

3. "Exploring the Body--Heart and Circulatory System," State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1515 West Sixth Avenue, Stillwater, Oklahoma 74074.

B. Filmstrip--"The Cardiovascular System," Robert J. Brady Company.

C. Pamphlets

1. *Blood and the Nation's Health.* Local chapter of the American National Red Cross or Midwestern Area Office, 4050 Lindell Boulevard, St. Louis, Missouri 63108.

2. *The Story of Blood.* Local chapter of the American National Red Cross or Midwestern Area Office, 4050 Lindell Boulevard, St. Louis, Missouri 63108.

THE BLOOD
UNIT IX

INFORMATION SHEET

I. Terms and definitions

- A. Hematology--Study of blood

  (NOTE: *Hemo-* means blood.)

- B. Homeostasis--State of chemical balance between the cell and its environment
- C. Gamma globulin--Antibody fraction of blood
- D. Erythrocytes--Red blood cells; one of the formed elements of the blood

  (NOTE: *Erythro-* means red; *cyte* means cell.)

- E. Leukocytes--White blood cells

  (NOTE: *Leuko-* means white.)

- F. Corpuscles--Blood cells

  (NOTE: *Corpuscles* means little bodies.)

- G. Granulocytes--White blood cells having a lobed nucleus and granules in the cytoplasm
- H. Agranulocytes--White blood cells having a round nucleus and no granules in the cytoplasm
- I. Megakaryocyte--Large nucleus cell

  (NOTE: *Mega* means large; *karyon* means nucleus.)

- J. Hemoglobin--Oxygen-carrying protein pigment of the red blood cells
- K. Pathogen--Disease-producing microorganism
- L. Coagulation--Clotting of blood
- M. Formed elements--Cells of the blood
- N. Plasma--Liquid portion of the blood
- O. Transfusion--Injection of the blood of one person into the blood vessels of another

INFORMATION SHEET

P. Agglutination--Clumping of blood cells when incompatible bloods are mixed

Q. Hemolysis--Destruction of red blood cells with the liberation of hemoglobin which diffuses into the surrounding fluid

R. Hemorrhage--Abnormal discharge of blood, either externally or internally

S. Lipid--Any of a group of fat or fatlike substances which are insoluble in water

T. Anemia--Deficiency of red blood cells or hemoglobin or both

U. Shock--Depression of the body functions due to the failure of the circulation

V. Bone marrow puncture--Insertion of a hollow needle into the marrow cavity of a flat bone to withdraw a sample of bone marrow

W. Hematocrit--Volume percentage of erythrocytes in whole blood

X. Heparin--Acid manufactured by the liver; an anticoagulant

Y. Anticoagulant-An agent which prevents or delays the formation of blood clots

Z. Thrombus--Clot formed in a blood vessel

AA. Embolus--Clot which has moved from where it was formed

BB. Electrolyte--Solution that conducts electricity by means of its ions

CC. Hemostasis--Checking the flow of blood through any part or vessel

II. General functions of the blood (Transparency 1)

A. Transportation

1. Oxygen from the lungs to the tissues
2. Carbon dioxide from the tissues to the lungs
3. Nutrients from digestive tract to tissues
4. Waste products from tissues to excretory organs
5. Hormones from organs of origin to various tissues and cells
6. Heat generated by muscles to other parts of the body

INFORMATION SHEET

B. Maintenance of homeostasis

1. Helps maintain acid-base balance
2. Helps maintain electrolyte balance
3. Helps maintain fluid balance

C. Combating infection

1. Some constituents fight infection
2. Some constituents help maintain immunity to disease

III. Physical characteristics of blood (Transparency 2)

A. 7 percent of body weight

B. Average volume in an adult between 4 and 5 liters

C. Normal pH slightly alkaline, 7.35 to 7.45

D. Consists of 55 percent plasma, 45 percent formed elements

IV. Principal components of blood plasma

A. Water

(NOTE: It comprises about ninety percent of the blood plasma and acts as carrier for remaining one hundred or so components.)

B. Blood proteins

(NOTE: This is about seven percent of the blood plasma.)

1. Amino acids
2. Antibody fractions

   Example: Gamma globulin

3. Blood clotting proteins

   Example: Prothrombin, fibrinogen

4. Other proteins that aid in maintenance of homeostasis

   Example: Serum albumin

INFORMATION SHEET

C. Carbohydrates, principally glucose

D. Lipids

E. Mineral salts

(NOTE: These are needed for bone formation, hormone production, production of red cells, and maintenance of acid-base balance.)

F. Waste products

G. Hormones and vitamins

H. Gases (oxygen, nitrogen, and carbon dioxide)

(NOTE: Small amount of the total oxygen and most of the carbon dioxide carried by the blood are dissolved in plasma.)

I. Heparin

(NOTE: This is an acid which prevents clotting in the blood stream.)

J. Vitamin K

(NOTE: This aids in clotting.)

V. Erythrocytes (Transparency 3)

(NOTE: These are also called RBCs, red blood cells, or red corpuscles.)

A. Red cells all alike or very similar

B. Minute, disc-shaped cells with central area thinner than the edges

C. No nucleus when found in the blood

D. Average life span 120 days

E. Remain in the bloodstream unless a vessel is cut or ruptured

VI. Characteristics of leukocytes

A. Colorless cells not alike

B. Shape and size vary

C. Larger than erythrocytes with well-defined nuclei

D. Average life span nine days

INFORMATION SHEET

E. May move out of the blood vessels by passing between the cells of the vessel walls (Transparency 4)

VII. Types of leukocytes (Transparency 5)

(NOTE: These are also called WBCs, white blood cells, or white corpuscles.)

A. Granulocytes--Have a lobed nucleus and granules in the cytoplasm

Examples: Neutrophils, eosinophils, and basophils

B. Agranulocytes--Have a simple nucleus and no granules in the cytoplasm

Examples: Monocytes and lymphocytes

VIII. Platelets (Transparency 5)

(NOTE: These are also called thrombocytes.)

A. Irregular size and shape

B. Smallest structures of the formed elements

C. Often seen in clusters

D. Relatively fragile; break easily under stress

IX. Functions of the formed elements

A. Erythrocytes--Transport oxygen to the cells and carbon dioxide from the cells

B. Leukocytes--Fight infection

C. Platelets--Coagulate blood

X. Origin of blood cells

A. Erythrocytes--Red bone marrow

B. Leukocytes

1. Granulocytes--Red bone marrow

2. Agranulocytes--Spleen and other lymph tissues

C. Platelets--From megakaryocytes in the red bone marrow

INFORMATION SHEET

XI. Blood clotting in the blood vessels

A. Under normal conditions, clotting in blood vessels is prevented by

1. Heparin

2. Smooth lining of the blood vessels

(NOTE: When cholesterol is deposited upon the inner surface of blood vessels, the roughened surface can cause clot formation.)

B. Two types of clots may form--Embolus and thrombus

XII. Mechanism of blood clotting (Transparency 6)

A. Platelets rupture and through a complex chemical process form fibrin, an insoluble protein

B. Fibrin acts as a mesh network which traps the remaining components of blood to form a clot

(NOTE: Prothrombin, calcium, and fibrinogen are normally present in the blood and do not bring about clotting. Thromboplastin is necessary for the formation of a clot and is only produced when platelets break. Platelets are very fragile and break easily when the inner surface of the blood vessel becomes roughened or when a blood vessel is severed allowing blood to escape from the closed system.)

XIII. Reasons for transfusions

A. Replacement of blood lost through hemorrhage

B. Treatment of anemia

C. Treatment of shock

D. Exchange of blood in certain blood disorders

E. As a preoperative or postoperative procedure to aid recovery

XIV. Blood groups (Transparency 7)

(NOTE: In theory, blood can be given according to this table:

Blood type	Receive blood from	Give blood to
A	A and O	A and AB
B	B and O	B and AB
AB	All	AB
O	O	All

INFORMATION SHEET

In practice, blood is nearly always given to persons from the same blood group and only after cross-matching to minimize adverse reactions.)

A. Type O

(NOTE: About 45 percent of all people have type O blood.)

B. Type AB

(NOTE: About 4 percent of all people have AB type blood.)

C. Type A

(NOTE: About 40 percent of all people have type A blood.)

D. Type B

(NOTE: About 10 percent of all people have type B blood.)

XV. Importance of determination of blood type

A. Not all blood types are compatible

B. Mixing of incompatible bloods may result in hemolysis or agglutination of red cells

C. Adverse reactions to transfusion are determined largely by the type of protein in the red cells

D. Usually a person can safely receive blood from another person of the same type

E. In all cases, before a transfusion is given, determination of the blood type should be made as well as a further check for compatibility

F. A person receiving blood incompatible with his own may experience a serious or fatal reaction

XVI. Rh factor

A. Approximately 85 percent of the population have another red cell protein called the Rh factor and are said to be Rh positive

B. Remaining 15 percent do not have this protein and are said to be Rh negative

C. When Rh positive blood is given to an Rh negative person, the recipient may produce counteracting proteins called antibodies which will destroy the red cells from the Rh positive blood

INFORMATION SHEET

D. An Rh negative mother may become sensitized by proteins from an Rh positive baby

(NOTE: The Rh positive factor in the baby would be inherited from the father.)

E. During a later pregnancy, the mother's antibodies may pass into the blood of the unborn infant and cause erythroblastosis fetalis, a destruction of the red cells

(NOTE: Erythroblastosis fetalis may be fatal or, if the infant is born alive, it may need complete blood replacement with Rh negative blood.)

XVII. Routine blood studies

A. Hemoglobin measurement

B. Total red cell count

C. Total white cell count

(NOTE: Differential white count usually done with the total white count gives the percentages of each type of white cell.)

D. Serology for syphilis

E. Blood chemistry tests

XVIII. Less common blood tests

A. Platelet count

B. Blood sugar

C. Clotting time and bleeding time

D. Examination of blood for parasites

E. Bone marrow puncture

XIX. Normal ranges of blood tests in adults

A. Erythrocytes--4,500,000 to 5,000,000

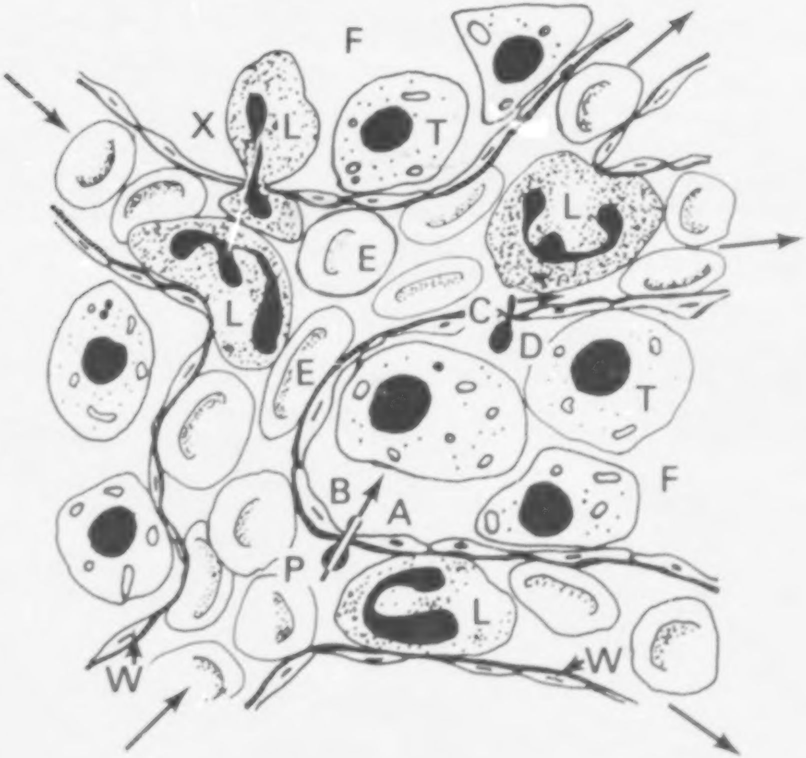
B. Leukocytes--5,000 to 10,000

C. Platelets--200,000 to 400,000

D. Hemoglobin--12-18 gm percent

E. Hematocrit--38-50 percent

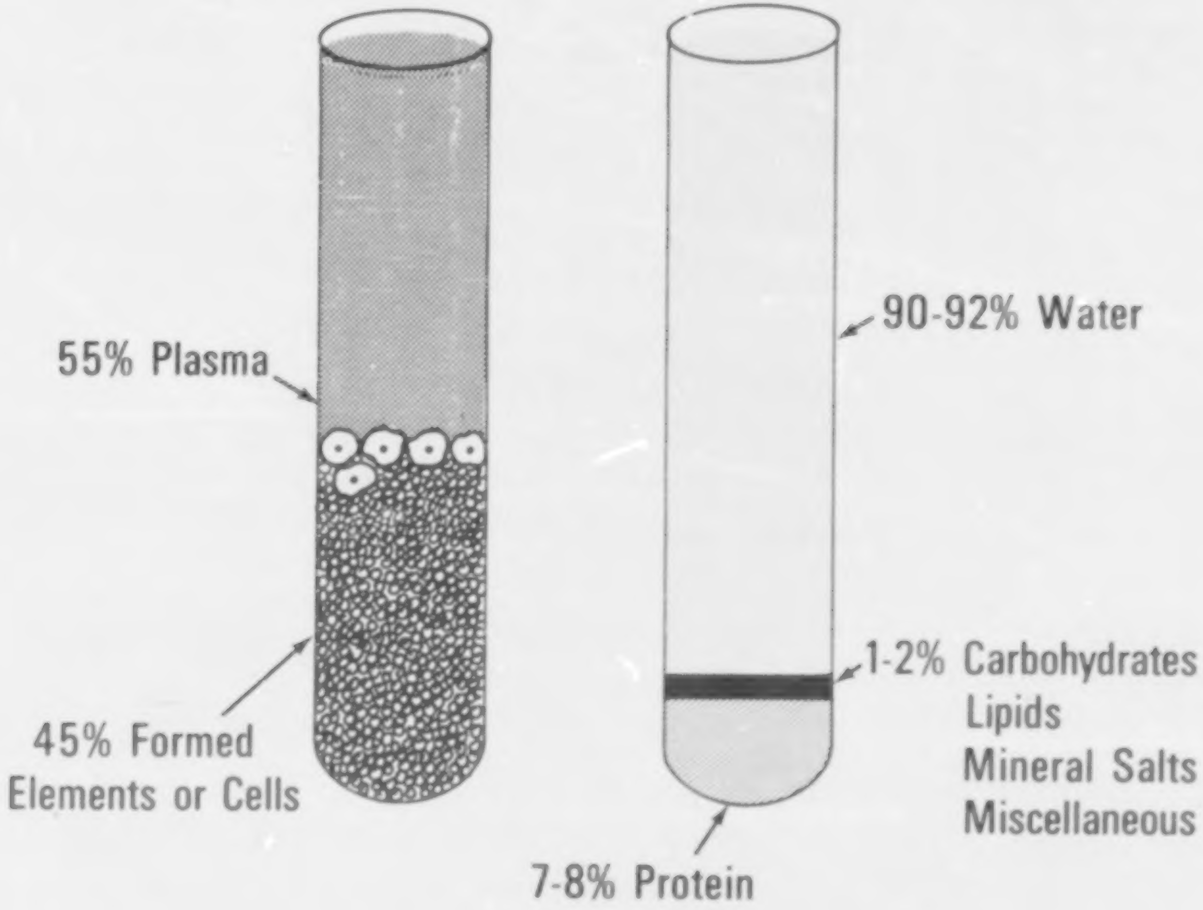
Relationship Between Cellular and Intercellular Fluid



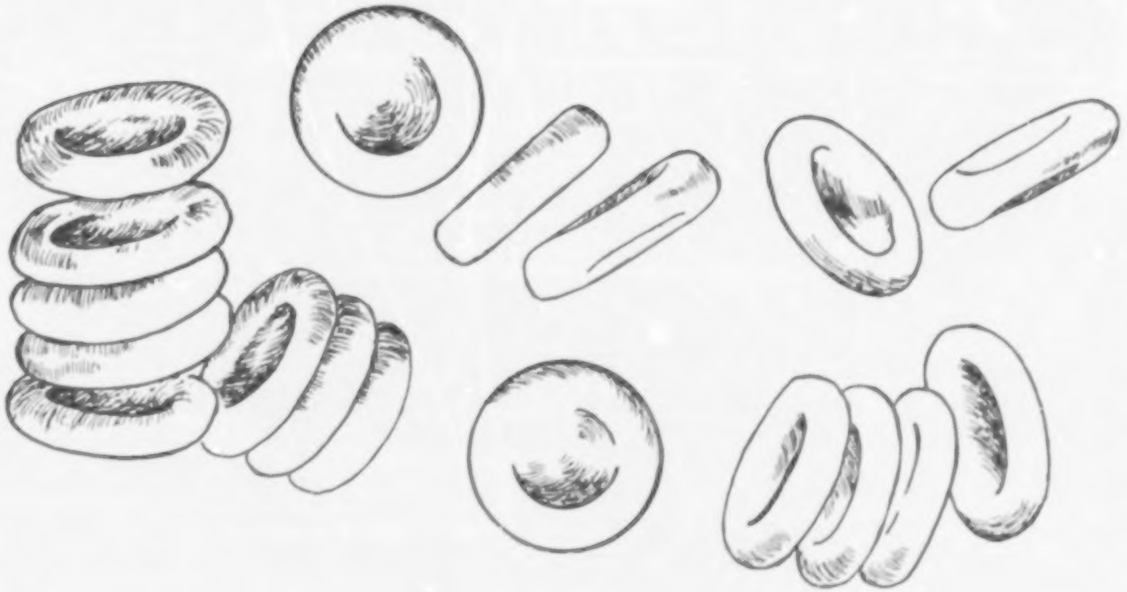
(Key: F-intracellular fluid, T-tissue cells, P-plasma, W-capillary wall, E-erythrocyte, L-leukocyte.) At A soluble food and B oxygen are passing from arteriole into tissue. At C wastes and D carbon dioxide are leaving through a venule.

Note leukocyte passing between two cells at X.

Composition of Blood

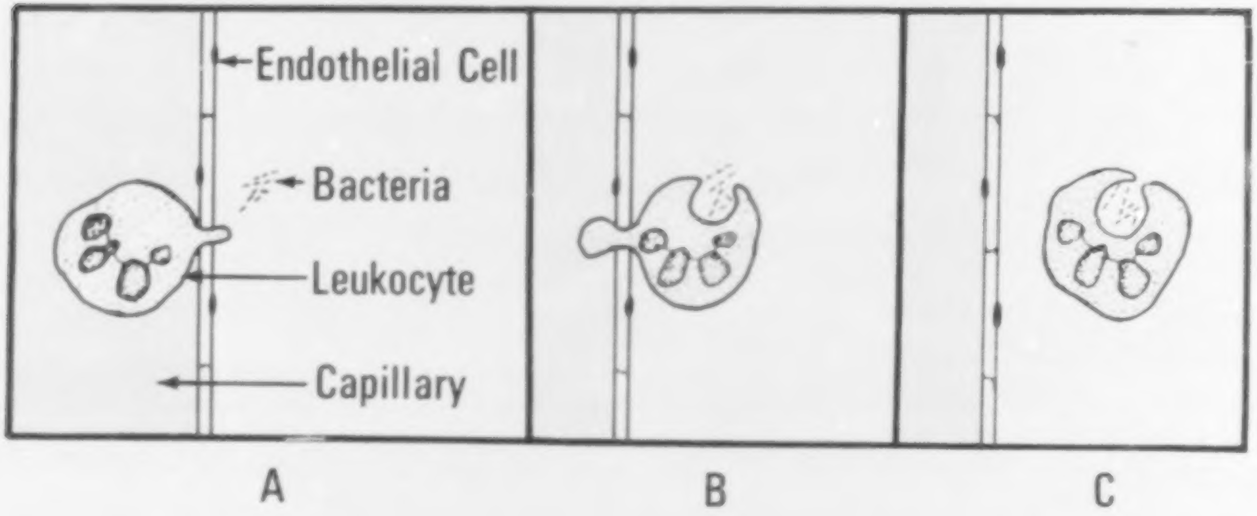

55% Plasma
45% Formed Elements or Cells
90-92% Water
1-2% Carbohydrates
Lipids
Mineral Salts
Miscellaneous
7-8% Protein

Erythrocytes



Erythrocytes viewed from various angles.
Note the concave surfaces.

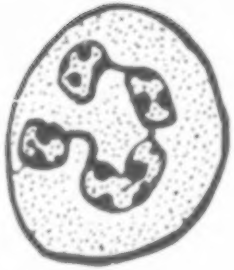
Ameboid Action of Leukocytes


Endothelial Cell
Bacteria
Leukocyte
Capillary
A
B
C

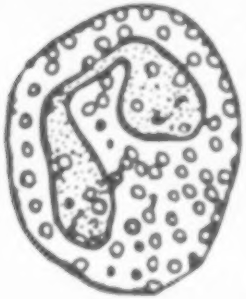
(A) A white blood cell squeezing itself through a capillary wall, in the region of an infection. (B) and (C) The white cell engulfing the bacteria, part of the body's process of fighting infection.

White Blood Cells

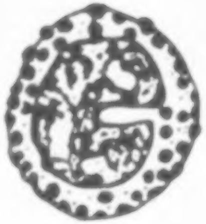
GROUP I-GRANULOCYTES
formed in red bone marrow



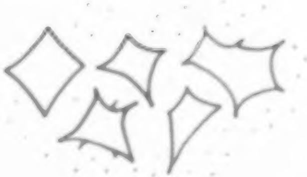
Neutrophil



Eosinophil

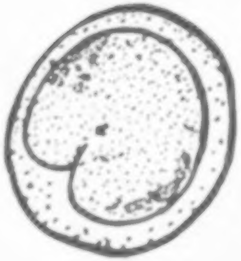


Basophil

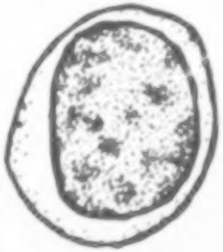


Platelets
(Thrombocytes)

GROUP II- AGRANULOCYTES
formed in lymphoid organs

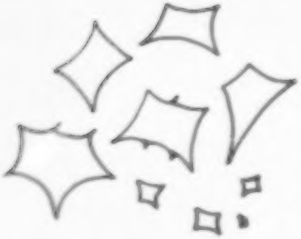


Monocyte

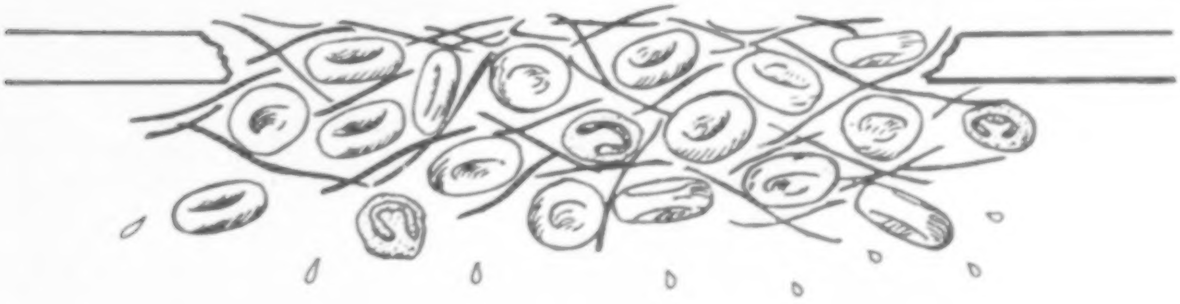


Lymphocyte

Blood Clot



Injured blood platelets start a series of changes in substances normally dissolved in the blood producing a meshwork of solid strands called fibrin.

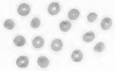
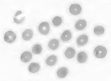
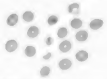
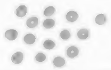
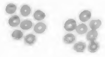
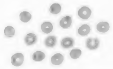
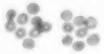
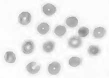
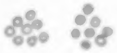
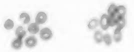
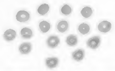
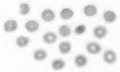
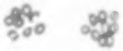
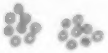
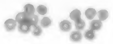
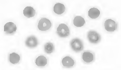


The fibrin forms a mesh in the wound area which traps erythrocytes and leukocytes. The erythrocytes give the clot its red color. The clot later contracts squeezing out a clear liquid.

Blood Typing

To clarify the reactions of incompatible blood groups, this chart shows what happens when a small sample of diluted blood from one type is mixed with test serum from an incompatible type. This clumping (agglutination) of red cells can be readily seen with a low power microscope.

RECIPIENT

DONOR	O	A	B	AB
O				
A				
B				
AB				

Horizontal letters designate blood type of recipient, vertical letters those of the donor. If types are compatible, the red blood cells remain in normal position. If types are incompatible, the red blood cells clump together, producing a reaction in the individual receiving the blood.

THE BLOOD
UNIT IX

ASSIGNMENT SHEET #1--CIRCULATION OF BLOOD

1. Using a model or a diagram, trace the circulation of a drop of blood throughout the body.

THE BLOOD
UNIT IX

TEST

1. Match the terms on the right to the correct definition.

______a. Abnormal discharge of blood, either externally or internally

______b. Study of blood

______c. Clumping of blood cells when incompatible bloods are mixed

______d. State of chemical balance between the cell and its environment

______e. Large nucleus cell

______f. Antibody fraction of blood

______g. Liquid portion of the blood

______h. Red blood cells; one of the formed elements of the blood

______i. Cells of the blood

______j. White blood cells

______k. White blood cells having a lobed nucleus and granules in the cytoplasm

______l. Blood cells

______m. Disease-producing microorganism

______n. Oxygen-carrying protein pigment of the red blood cells

______o. Solution that conducts electricity by means of its ions

______p. Checking the flow of blood through any part or vessel

1. Formed elements
2. Agglutination
3. Hemorrhage
4. Pathogen
5. Hemostasis
6. Corpuscles
7. Plasma
8. Megakaryocyte
9. Granulocytes
10. Gamma globulin
11. Hematology
12. Hemoglobin
13. Erythrocytes
14. Leukocytes
15. Homeostasis
16. Electrolyte

(NOTE: Answers to q through cc are listed on this page.)

______q. Clotting of blood

______r. White blood cells having a round nucleus and no granules in the cytoplasm

______s. Clot which has moved from where it was formed

______t. Any of a group of fat or fatlike substances which are insoluble in water

______u. Clot formed in a blood vessel

______v. Deficiency of red blood cells or hemoglobin or both

______w. An agent which prevents or delays the formation of blood clots

______x. Depression of the body functions due to the failure of the circulation

______y. Acid manufactured by the liver; an anticoagulant

______z. Insertion of a hollow needle into the marrow cavity of a flat bone to withdraw a sample of bone marrow

____aa. Volume percentage of erythrocytes in whole blood

____bb. Destruction of red blood cells with the liberation of hemoglobin which diffuses into the surrounding fluid

____cc. Injection of the blood of one person into the blood vessels of another

17. Agranulocytes
18. Coagulation
19. Transfusion
20. Hemolysis
21. Shock
22. Heparin
23. Embolus
24. Hematocrit
25. Lipid
26. Anemia
27. Bone marrow puncture
28. Anticoagulant
29. Thrombus

2. Discuss three general functions of blood.

   a.

   b.

   c.

3. List three physical characteristics of blood.

   a.

   b.

   c.

4. List eight principal components of blood plasma.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

5. Describe the erythrocytes.

6. Discuss characteristics of leukocytes.

7. List the two types of leukocytes.
   a.
   b.

8. Describe platelets.

9. List one function of each of the formed elements.
   a. Leukocytes
   b. Platelets
   c. Erythrocytes

10. List the origin of the blood cells.
    a. Leukocytes
    b. Erythrocytes
    c. Platelets

11. Discuss blood clotting in the blood vessels.

12. Discuss the mechanism of blood clotting.

13. List four reasons for blood transfusions.
    a.
    b.
    c.
    d.

14. List four blood groups.

    a.

    b.

    c.

    d.

15. Discuss the importance of determination of blood type.

16. Discuss the Rh factor.

17. List three routine blood studies.

    a.

    b.

    c.

18. List three less common blood tests.

    a.

    b.

    c.

19. Select the normal ranges of white cells, red cells, platelets, hemoglobin, and hematocrit from the list by placing the appropriate number to the left of the matching terms.

______a.	Platelets	1.	4,500,000 to 5,000,000
______b.	Erythrocytes	2.	12-18 gm percent
______c.	Hematocrit	3.	200,000 to 400,000
______d.	Hemoglobin	4.	38-50 percent
______e.	Leukocytes	5.	5,000 to 10,000

20. Trace the circulation of a drop of blood throughout the body.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

THE BLOOD
UNIT IX

ANSWERS TO TEST

1. a. 3
   b. 11
   c. 2
   d. 15
   e. 8
   f. 10
   g. 7
   h. 13
   i. 1
   j. 14
   k. 9
   l. 6
   m. 4
   n. 12
   o. 16
   p. 5
   q. 18
   r. 17
   s. 23
   t. 25
   u. 29
   v. 26
   w. 28

x. 21

y. 22

z. 27

aa. 24

bb. 20

cc. 19

2. Discussion should include:

   a. Transportation

      1) Oxygen from the lungs to the tissues

      2) Carbon dioxide from the tissues to the lungs

      3) Nutrients from digestive tract to tissues

      4) Waste products from tissues to excretory organs

      5) Hormones from organs of origin to various tissues and cells

      6) Heat generated by muscles to other parts of the body

   b. Maintenance of homeostasis

      1) Helps maintain acid-base balance

      2) Helps maintain electrolyte balance

      3) Helps maintain fluid balance

   c. Combating infection

      1) Some constituents fight infection

      2) Some constituents help maintain immunity to disease

3. Any three of the following

   a. 7 percent of body weight

   b. Average volume in an adult between 4 and 5 liters

   c. Normal pH slightly alkaline, 7.35 to 7.45

   d. Consists of 55 percent plasma, 45 percent formed elements

4. Any eight of the following
    - a. Water
    - b. Blood proteins
    - c. Carbohydrates, principally glucose
    - d. Lipids
    - e. Mineral salts
    - f. Waste products
    - g. Hormones and vitamins
    - h. Gases (oxygen, nitrogen, and carbon dioxide)
    - i. Heparin
    - j. Vitamin K
5. Description should include:
    - a. Red cells all alike or very similar
    - b. Minute, disc-shaped cells with central area thinner than the edges
    - c. No nucleus when found in the blood
    - d. Average life span 120 days
    - e. Remain in the bloodstream unless a vessel is cut or ruptured
6. Discussion should include:
    - a. Colorless cells not alike
    - b. Shape and size vary
    - c. Larger than erythrocytes with well-defined nuclei
    - d. Average life span nine days
    - e. May move out of the blood vessels by passing between the cells of the vessel walls
7. a. Granulocytes
    - b. Agranulocytes

8. Description should include:
   a. Irregular size and shape
   b. Smallest structures of the formed elements
   c. Often seen in clusters
   d. Relatively fragile; break easily under stress
9. a. Fight infection
   b. Coagulate blood
   c. Transport oxygen to the cells and carbon dioxide from the cells
10. a. Leukocytes
       1) Granulocytes--Red bone marrow
       2) Agranulocytes--Spleen and other lymph tissues
    b. Erythrocytes--Red bone marrow
    c. Platelets--From megakaryocytes in the red bone marrow
11. Discussion should include:
    a. Under normal conditions, clotting in blood vessels is prevented by
       1) Heparin
       2) Smooth lining of the blood vessels
    b. Two types of clots may form--Embolus and thrombus
12. Discussion should include:
    a. Platelets rupture and through a complex chemical process form fibrin, an insoluble protein
    b. Fibrin acts as a mesh network which traps the remaining components of blood to form a clot
13. Any four of the following
    a. Replacement of blood lost through hemorrhage
    b. Treatment of anemia
    c. Treatment of shock
    d. Exchange of blood in certain blood disorders
    e. As a preoperative or postoperative procedure to aid recovery

14. a. Type O

    b. Type AB

    c. Type A

    d. Type B

15. Discussion should include:

    a. Not all blood types are compatible

    b. Mixing of incompatible bloods may result in hemolysis or agglutination of red cells

    c. Adverse reactions to transfusion are determined largely by the type of protein in the red cells

    d. Usually a person can safely receive blood from another person of the same type

    e. In all cases, before a transfusion is given, determination of the blood type should be made as well as a further check for compatibility

    f. A person receiving blood incompatible with his own may experience a serious or fatal reaction

16. Discussion should include:

    a. Approximately 85 percent of the population have another red cell protein called the Rh factor and are said to be Rh positive

    b. Remaining 15 percent do not have this protein and are said to be Rh negative

    c. When Rh positive blood is given to an Rh negative person, the recipient may produce counteracting proteins called antibodies which will destroy the red cells from the Rh positive blood

    d. An Rh negative mother may become sensitized by proteins from an Rh positive baby

    e. During a later pregnancy, the mother's antibodies may pass into the blood of the unborn infant and cause erythroblastosis fetalis, a destruction of the red cells

17. Any three of the following

    a. Hemoglobin measurement

    b. Total red cell count

    c. Total white cell count

- d. Serology for syphilis
- e. Blood chemistry tests

18. Any three of the following
    - a. Platelet count
    - b. Blood sugar
    - c. Clotting time and bleeding time
    - d. Examination of blood for parasites
    - e. Bone marrow puncture

19. a. 3
    - b. 1
    - c. 4
    - d. 2
    - e. 5

20. Evaluated to the satisfaction of the instructor.

CIRCULATORY SYSTEM
UNIT X

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list, identify, and describe the parts of the circulatory system. The student should be able to list functions and describe the circulation. She should be able to discuss the measurement of blood pressure. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the circulatory system to the correct definition.
2. List the parts of the circulatory system.
3. List four functions of the circulatory system.
4. Identify the structures of the heart on a diagram.
5. Describe the blood supply to the heart.
6. Discuss the physiology of the heart.
7. Describe the structure and function of the blood vessels.
8. Trace the circulation of a drop of blood throughout the body giving the area where carbon dioxide is exchanged for oxygen and the area where food and oxygen is exchanged for waste products.
9. Locate the major arteries and veins (as identified by the instructor) on given diagrams.
10. List major arteries and veins supplying the head.
11. Trace the blood through the portal circulation.
12. Describe the lymphatic system.
13. List two functions of the lymph system.
14. Describe the spleen.
15. List four functions of the spleen.

16. Describe the pulse.

17. List three sites for taking pulse.

18. List five factors that influence pulse rate.

19. Discuss the measurement of blood pressure giving the name of the instrument used for measurement.

20. List eight ways to help prevent heart and circulatory ailments.

CIRCULATORY SYSTEM
UNIT X

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Make transparencies.

   D. Discuss terminal and specific objectives.

   E. Discuss information and assignment sheets.

   F. Provide chart or model for use in completing assignment sheet.

   G. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Complete assignment sheet.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1--Structure of the Heart

      2. TM 2--Blood Supply to the Heart

      3. TM 3--Coronary Arteries

      4. TM 4--The Heart Pumping Cycle

      5. TM 5--Conduction System of the Heart

6. TM 6--Capillary Function
7. TM 7--Bicuspid Valves
8. TM 8--Principal Arteries
9. TM 9--Principal Veins
10. TM 10--The Portal Circulation
11. TM 11--The Lymphatic Structures

D. Assignment Sheet #1--Circulation

E. Test

F. Answers to test

II. References:

A. Anthony, Catherine P. *Structure and Function of the Body*. St. Louis, Missouri: The C. V. Mosby Company, 1964.

B. *Training the Nursing Aide*. Chicago, Illinois: Hospital Research and Educational Trust, 1965.

C. Jacob, Stanley and Clarice Francone. *Structure and Function in Man*. Philadelphia, Pennsylvania: W. B. Saunders Company, 1965.

D. Keane, Claire B. *Essentials of Nursing*. Philadelphia, Pennsylvania: W. B. Saunders Company, 1964.

E. Memmler, Ruth and Ruth Rada. *The Human Body in Health and Disease*. Philadelphia, Pennsylvania: J. B. Lippincott Company, 1970.

F. Rasmussen, Sandra. *Foundations of Practical and Vocational Nursing*. New York City: The Macmillan Company, 1967.

G. Sutton, Audrey. *Workbook for Practical Nurses*. Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

III. Additional materials:

A. Films

1. "Circulation of Blood," Oklahoma State Department of Health.
2. "Human Body--Circulatory System," Oklahoma State Department of Health.
3. "I Am Joe's Heart," State Department of Vocational and Technical Education.
4. "The Heart--How it Works," Oklahoma State Department of Health.

5. "Exploring the Body--Heart and Circulatory Systems," State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1515 West Sixth Avenue, Stillwater, Oklahoma 74074.

B. Filmstrips

1. "Cardiovascular System," Robert J. Brady Company.

2. "Lymphatic and Reticuloendothelial System," Robert J. Brady Company.

CIRCULATORY SYSTEM
UNIT X

INFORMATION SHEET

I. Terms and definitions

A. Cardiac--Pertaining to the heart

B. Cardiology--Study of the heart

C. Endocardium--Lining of the heart

D. Myocardium--Muscle of the heart

E. Pericardium--Covering of the heart

F. Atrium--Upper chamber or compartment of the heart

G. Ventricle--Lower, pumping chamber of the heart

H. Vein--One of the blood vessels carrying blood to the heart

I. Artery--One of the blood vessels carrying blood from the heart

J. Arteriole--Very small artery

K. Venule--Very small vein

L. Capillary--Minute blood vessel between arterioles and venules, or a similar channel containing lymph

M. Tricuspid--Three-pointed; heart valve made up of three flaps

N. Cusp--Flap of the valves which open and close

O. Bicuspid--Heart valve comprised of two heavy flaps

P. Aorta--Main trunk of the arterial system; largest artery

Q. Coronary--Blood vessels which supply the walls of the heart

R. S-A node--Pacemaker; small mass of specialized muscle fibers in the wall of the right atrium where the rhythm of the cardiac contraction is usually established

S. A-V node--Mass of specialized muscle fibers located in the septum at the junction of the four chambers

T. Septum--Wall down the middle of the heart that divides it into right and left sides

U. Systole--Period of contraction of the heart

INFORMATION SHEET

V. Diastole--Period of rest in the heart between contractions

W. Venous sinuses--Network of spaces in the dura mater which drain blood from the brain into the jugular vein

(NOTE: Dura mater is the outer layer of meninges, the covering of the brain.)

X. Lymph nodes--Small bundles of special lymphoid tissue; also called lymph glands

Y. Thymus--Two-lobed gland of lymphatic tissue in upper part of the chest

Z. Excretory--Pertaining to elimination of waste products

AA. Circle of Willis--Circle of arteries around the base of the brain formed by communicating branches of cerebral arteries

BB. Blood pressure--Pressure exerted by the blood on the wall of any vessel, usually the artery

II. Parts of circulatory system

A. Cardiovascular system

1. Heart

2. Blood vessels

(NOTE: These include arteries, veins, and capillaries.)

B. Lymphatic system

1. Lymph vessels

2. Accessory organs

(NOTE: These include the thymus, spleen, tonsils, and adenoids.)

C. The blood

III. Functions of circulatory system

A. Transportation of food and oxygen to body cells

B. Transportation of waste products to excretory organs

C. Distribution of hormones and antibodies

D. Aid in control of body temperature

E. Maintenance of homeostasis

INFORMATION SHEET

IV. Structure of heart (Transparency 1)

A. Layers of the heart wall

1. Endocardium--Very smooth layer of cells that lines the inside of the heart and forms the valves

2. Myocardium--Middle and thickest layer; the muscle layer

3. Pericardium--Covering of the heart; double membrane that secretes fluid which provides lubrication for the heart action preventing friction

B. Chambers

1. Right atrium or auricle--Thin walled space that receives venous blood as it returns from the body

2. Right ventricle--Thicker walled space that receives the blood from the right atrium and pumps it into the lungs

3. Left atrium or auricle--Receives oxygenated blood from the lungs

4. Left ventricle--Thickest walled space of the heart; receives blood from the left atrium and pumps it to the rest of the body through the arteries

(NOTE: The right and left sides of the heart are completely separated from each other by the septum.)

C. Valves

1. All open one way; located at the entrance and exit of each ventricle to keep the blood flowing in the right direction

2. Tricuspid--Closes to prevent any blood from flowing back into the right atrium when the right ventricle begins pumping

(NOTE: This valve is also called atrioventricular valve.)

3. Pulmonary semilunar--Between the right ventricle and the pulmonary artery which leads to the lungs; prevents blood from returning to the right ventricle

4. Bicuspid--Closes to prevent blood from returning to the left atrium when the powerful left ventricle begins its contractions

5. Aortic semilunar--Between the left ventricle and the aorta; prevents return of the blood to the left ventricle

INFORMATION SHEET

V. Blood supply to the heart (Transparencies 2 and 3)

   A. Coronary arteries branch off the aorta just above the aortic semilunar valve

   B. Left branch supplies the left atrium and ventricle; right supplies the right side

   C. Coronary arteries are capable of increasing or decreasing the blood supply as needed; demands made upon the heart by exercise, emotional stress, sleep, and other body actions influence the heart's need for oxygen

   D. Coronary arteries become smaller as they enter the heart wall and nourish the tissue through capillaries, then drain into venules and coronary veins that carry the blood to the right atrium

   (NOTE: The arteries which supply the heart muscle fit around the top of the heart like a crown, hence the name coronary.)

VI. Physiology of the heart (Transparency 4)

   A. Cardiac cycle--Two phases, the systole and the diastole; while the atria contract, the ventricles rest; when the ventricles contract, the atria relax and fill with blood

   B. Nerve control--Heart capable of contracting rhythmically even though its outside nerve supply may be interrupted or destroyed; without nerve connection the heart will beat at slower rate

   Example: The rate may be forty beats per minute compared to the usual seventy to ninety per minute

   C. Nerve supply

      1. Part of autonomic nervous system

      2. Complex system with both accelerating and braking controls

   D. Conduction system--Combined nerve and muscle tissue which regulates the order of contractions (Transparency 5)

      1. Beginning of the contraction is in the S-A node (sinoatrial)

      2. Contraction wave passes through the atrial muscles causing them to contract

      3. A-V node (atrioventricular) is stimulated and transmits the wave to the bundle of His which stimulates the entire ventricular musculature to contract

   E. Heart sounds and murmurs

      1. Normal heart sounds are usually described by two syllables, lubb and dupp

INFORMATION SHEET

2. First or systolic sound (lubb) is due to closure of the cuspid valves and contraction of the ventricles

3. Second or diastolic sound (dupp) is due to closure of the semilunar valves

4. Murmurs, abnormal heart sounds, may be due to faulty valve or one scarred by disease

VII. Structure and function of blood vessels

A. Arteries

1. Thickest walls of all blood vessels; more muscular than veins; walls three-layered with central layer of muscular tissue thickest

2. Carry blood from the pumping chambers (ventricles) to the organs

(NOTE: Blood pressure is highest in the arteries nearest the heart. As the blood pressure decreases, the thickness of the arteries decreases also.)

B. Capillaries (Transparency 6)

1. Single layer of endothelial cells forms a tube barely large enough to permit passage of blood cells

2. Materials necessary to life of cells pass through capillary walls into tissues; waste products are absorbed from tissues

C. Veins (Transparency 7)

1. Less muscular vessels than arteries; equipped with one-way valves which permit the blood to flow in only one direction

2. Transport blood back to the heart under low pressure

VIII. Circulation of blood

A. Systemic

1. Left ventricle

2. Aorta

INFORMATION SHEET

3. Arteries

4. Arterioles

5. Capillaries--Food and oxygen exchanged for waste products and carbon dioxide

6. Venules

7. Veins

8. Inferior or superior vena cava

9. Right atrium

B. Pulmonary

1. Right ventricle

2. Pulmonary artery

3. Arterioles

4. Capillaries--Carbon dioxide is exchanged for oxygen

5. Venules

6. Pulmonary vein

7. Left atrium

IX. Principal arteries and veins

A. Arteries (Transparency 8)

1. Aorta (Ascending, arch, descending thoracic, abdominal)

2. Carotid

3. Subclavian

4. Axillary

5. Brachial

INFORMATION SHEET

6. Mesenteric
7. Renal
8. Radial
9. Ulnar
10. Iliac
11. Femoral
12. Popliteal
13. Tibial
14. Dorsalis pedis

B. Veins (Transparency 9)

1. Jugular
2. Subclavian
3. Axillary
4. Vena cava--Superior, inferior
5. Brachial
6. Renal
7. Iliac
8. Radial
9. Ulnar
10. Femoral
11. Saphenous--Great, small
12. Popliteal
13. Tibial

INFORMATION SHEET

X. Blood supply to the head

   A. Arteries

      1. Carotid

         (NOTE: Carotid arteries in sides of neck divide to form many branches.)

      2. Temporal

      3. Facial

      4. Occipital

      5. Cerebral

   B. Veins

      1. Facial

      2. Temporal

      3. Occipital

      4. Cerebral

      5. Jugular

   (NOTE: Many veins in head unite to form jugular veins in each side of the neck.)

XI. Portal circulation (Transparency 10)

   A. Veins from the stomach, intestine, spleen, and pancreas empty into one vessel, the portal vein

   B. Portal vein carries the blood loaded with digested food to the liver which extracts food materials for storage and modification including removal of toxins

   C. Blood leaves the liver through the hepatic veins which empty into the inferior vena cava

XII. Lymphatic system (Transparency 11)

   A. Network of very small lymph capillaries collects excess tissue fluid and certain waste products from the body cells

   B. Lymph fluid resembles plasma in composition but contains less protein

INFORMATION SHEET

- C. Lymph drainage from the intestinal area may be milky in appearance due to the high fatty content after a meal
- D. Lymph capillaries empty into progressively larger vessels and finally drain into the thoracic duct and the right lymphatic duct
- E. The two main lymphatic channels empty into the veins at the base of the neck where the lymph mixes with the blood plasma
- F. Flow of lymph is slow and is aided by muscular contractions and by valves which keep it from flowing backward
- G. Lymph nodes are found at intervals along the lymph system
- H. Some body organs, tonsils, adenoids, and spleen, are formed of lymphoid tissue

XIII. Functions of lymph system

- A. Chief function--Filtration of excess fluid, bacteria, waste products, and other foreign substances
- B. Manufacture of lymphocytes and monocytes
- C. Absorption of digested fats from small intestine

XIV. Spleen

- A. Largest mass of lymphoid tissue
- B. Located in upper abdomen behind stomach
- C. Can be surgically removed without ill effect

XV. Functions of spleen

- A. Blood storage reservoir
- B. Destroys old red blood cells
- C. Filters out dead blood cells and cancer cells
- D. Destroys bacteria
- E. Manufactures lymphocytes
- F. Produces antibodies

INFORMATION SHEET

XVI. Pulse

- A. Ventricles pump blood regularly into the arteries about seventy to eighty times per minute
- B. Force of the contraction sends a wave of increased pressure called the pulse along the arteries
- C. Pulse can be felt with the fingers in arteries near the surface

XVII. Sites for taking pulse

- A. Radial artery on thumb side of wrist
- B. Carotid artery in side of neck
- C. Temporal artery in front of ear
- D. Mandibular artery in notch on lower jawbone (mandible)

XVIII. Factors which influence pulse rate

- A. Size--Somewhat faster in small people
- B. Sex--Slightly faster in women
- C. Age--Higher in newborn infants with rate slowing as child matures
- D. Activity--Muscular activity causes increase
- E. Emotions--Emotional disturbances may cause increase
- F. Infection or fever--May increase pulse rate
- G. Thyroid secretion
- H. Medication or illness

XIX. Measurement of blood pressure

- A. Measurement of blood pressure is one way to aid in evaluation of a person's health
- B. Usually measurement is made only of the arterial pressure
- C. Two measurements are made
  1. Systolic pressure--Occurs when heart muscle contracts
  2. Diastolic pressure--Occurs during relaxation of heart muscle

INFORMATION SHEET

D. Instrument used--Sphygmomanometer which is essentially a dial or a column of mercury connected to an inflatable cuff

E. Blood pressure expressed in millimeters of mercury

(NOTE: When systolic pressure is 120, diastolic pressure is 80. Blood pressure measurement is written $\frac{120}{80}$ or 120/80. Largest number (systolic) is always written on top or to the left.)

XX. Prevention of heart and circulatory ailments

A. Proper nutrition to maintain desirable weight for age and height

1. Obesity does not directly cause heart disease but it does place an unnecessary strain on the heart

2. Certain food elements are necessary for the formation of blood, maintenance of homeostasis and acid-base balance, and clotting of blood

B. Regular exercise

1. Exercise does not damage the heart as long as the individual is in good physical health and exercises regularly

2. Exercise aids circulation

3. Sudden bursts of strenuous activity may damage the heart

C. Avoiding sudden extremes of temperature--Cold especially may affect the blood vessels and precipitate a heart attack

D. Temperate habits in use of alcohol and tobacco--Both have a damaging effect on the heart and blood vessels

E. Regular physical evaluation

1. Periodic physical examinations of children assist in early detection of heart disease

2. In adults periodic examinations aid in early detection of abnormal conditions

F. Prevention and care of infections--Definite relationship between streptococcal infections of the throat and heart disease

G. Adequate rest--Aids heart and body to renew itself

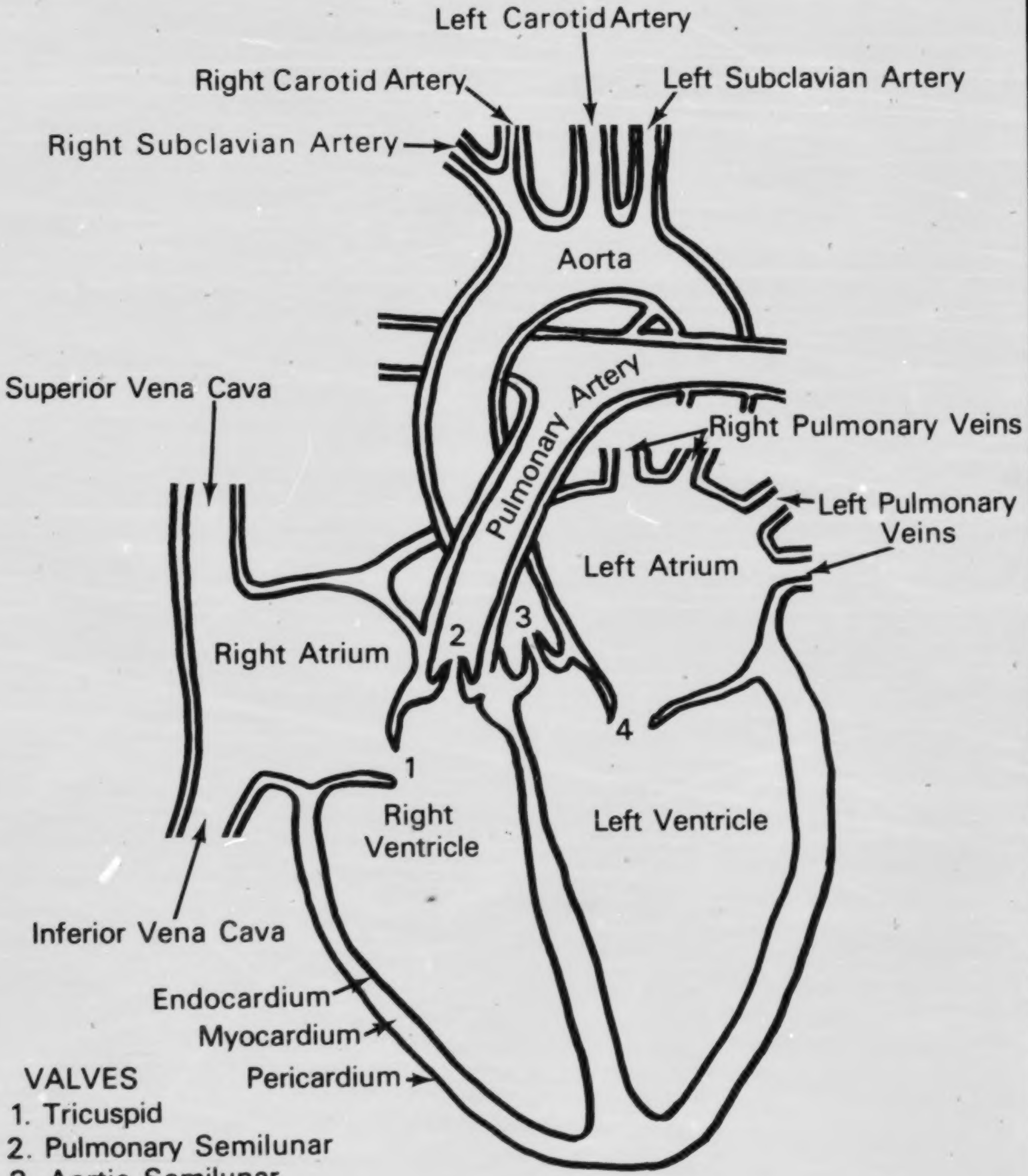
H. Maintenance of good posture--Gives heart and lungs sufficient area in which to function

INFORMATION SHEET

I. Avoidance of long periods of sitting with legs crossed which interferes with return flow of blood from lower extremities

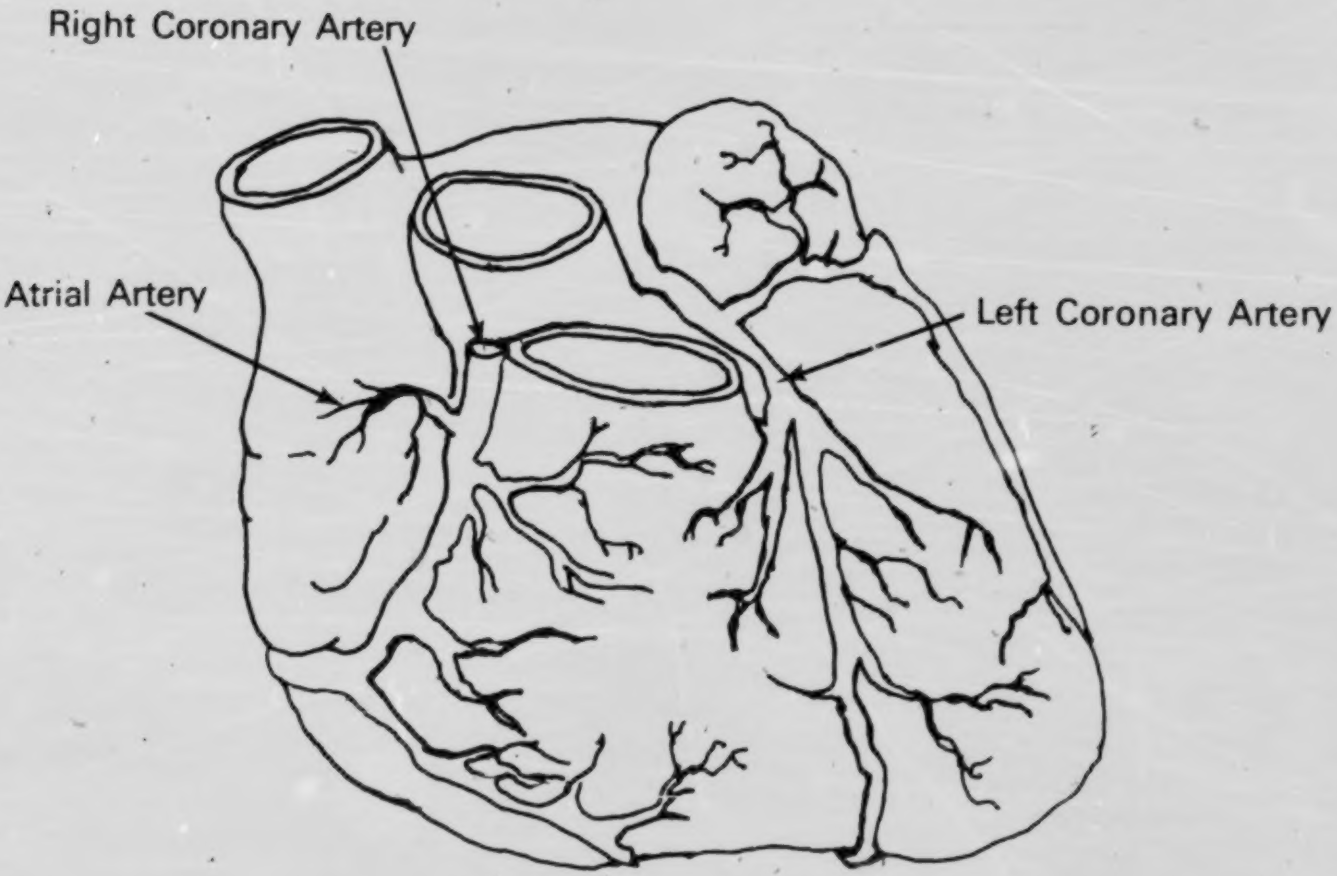
J. Avoidance of circular garters or other apparel which interferes with circulation

Structure of the Heart


Left Carotid Artery
Right Carotid Artery
Left Subclavian Artery
Right Subclavian Artery
Aorta
Superior Vena Cava
Pulmonary Artery
Right Pulmonary Veins
Left Pulmonary Veins
Left Atrium
Right Atrium
2
3
4
1
Right Ventricle
Left Ventricle
Inferior Vena Cava
Endocardium
Myocardium
Pericardium

VALVES
1. Tricuspid
2. Pulmonary Semilunar
3. Aortic Semilunar
4. Bicuspid or Mitral

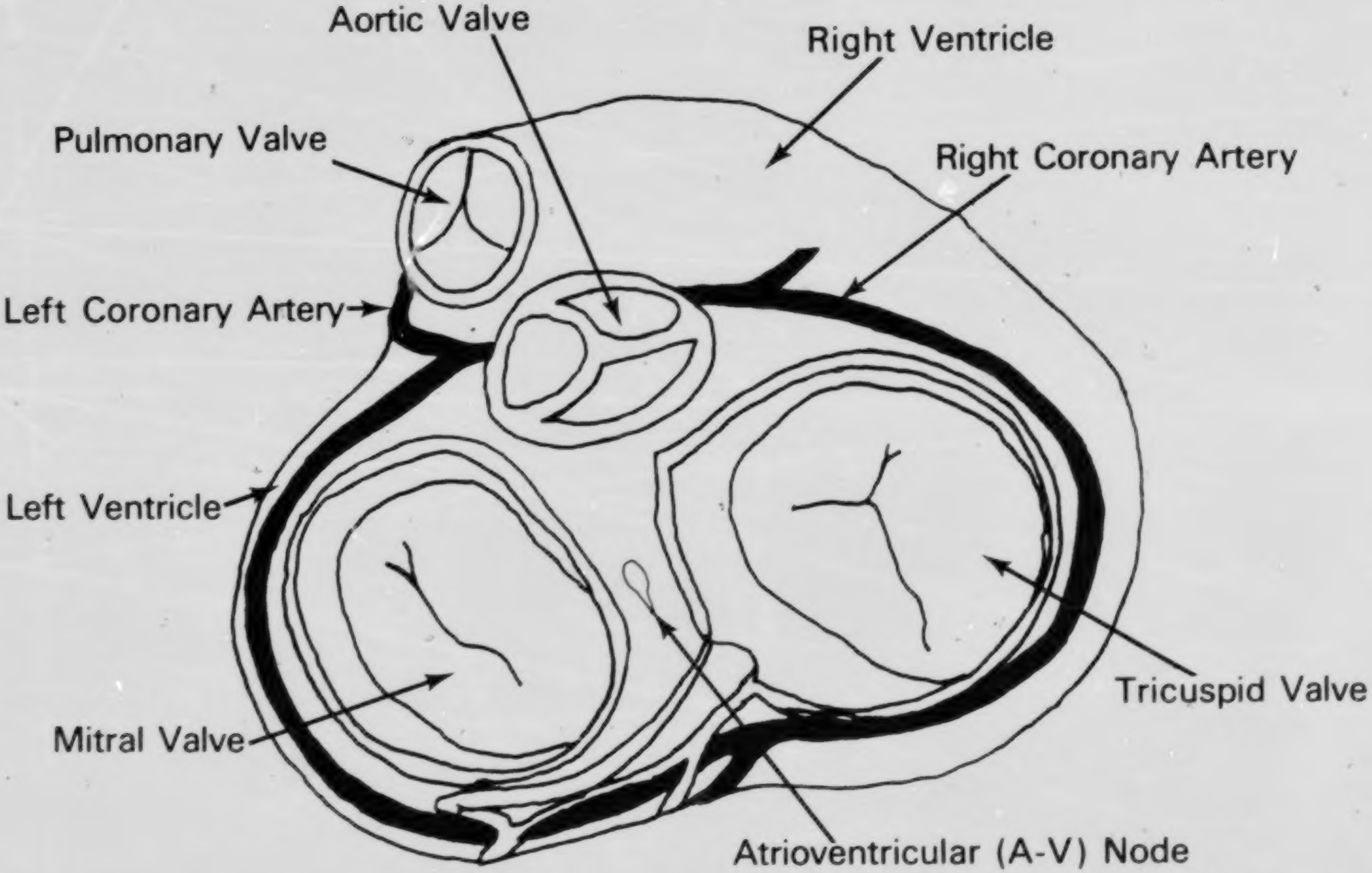
Blood Supply to the Heart


Right Coronary Artery
Atrial Artery
Left Coronary Artery

TM 2

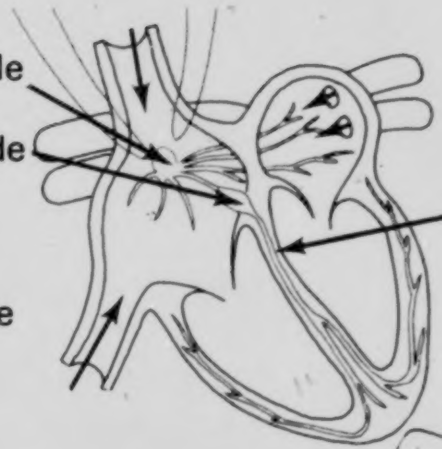
N. I - 321-C

Coronary Arteries

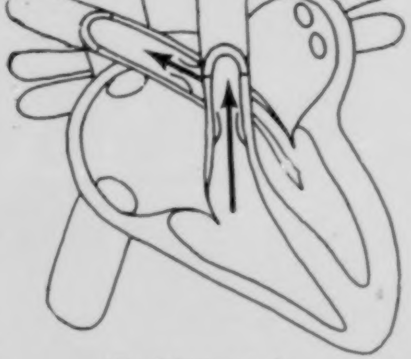

Aortic Valve
Right Ventricle
Pulmonary Valve
Right Coronary Artery
Left Coronary Artery
Left Ventricle
Tricuspid Valve
Mitral Valve
Atrioventricular (A-V) Node

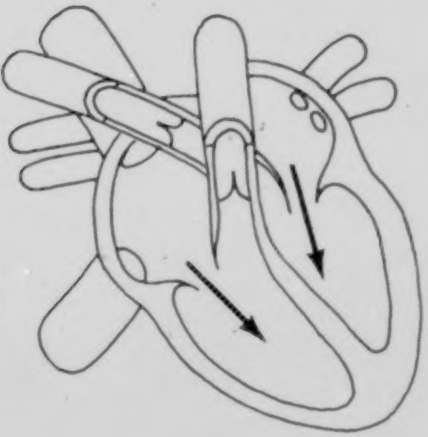
TOP VIEW OF HEART

The Heart Pumping Cycle



1. Blood fills both Atria, stimulating impulse in SA node - Diastole

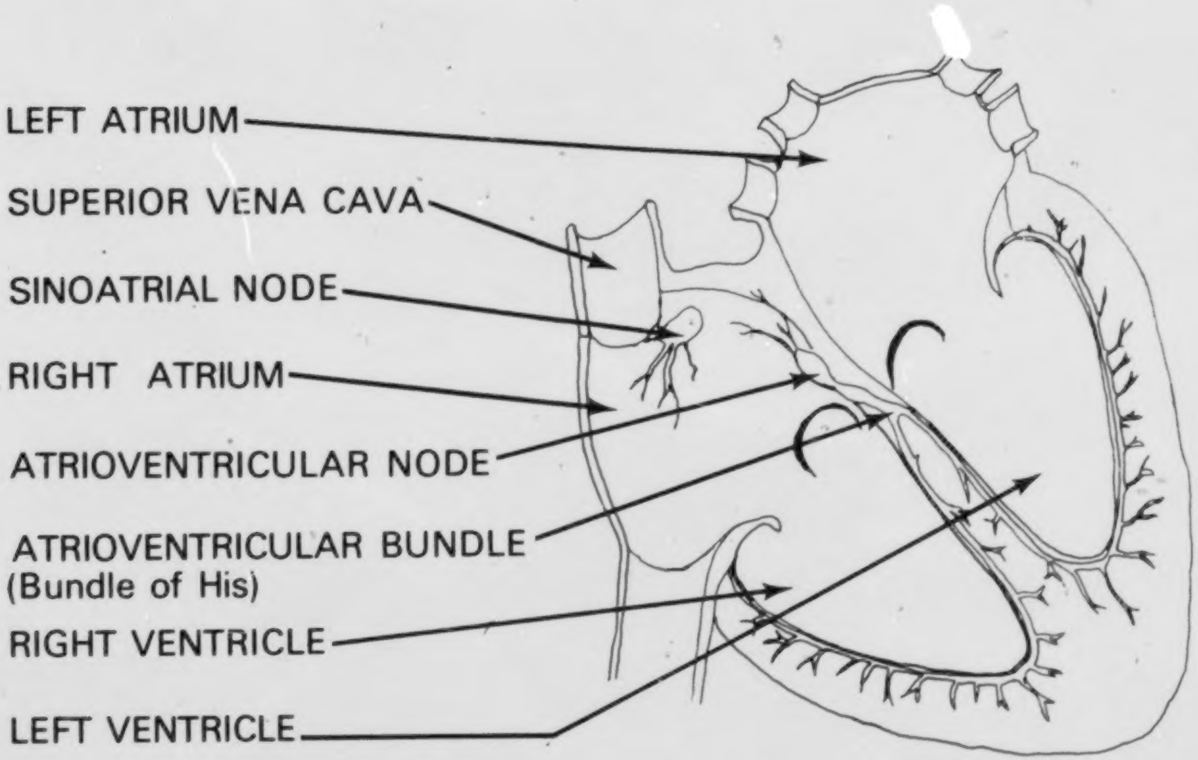




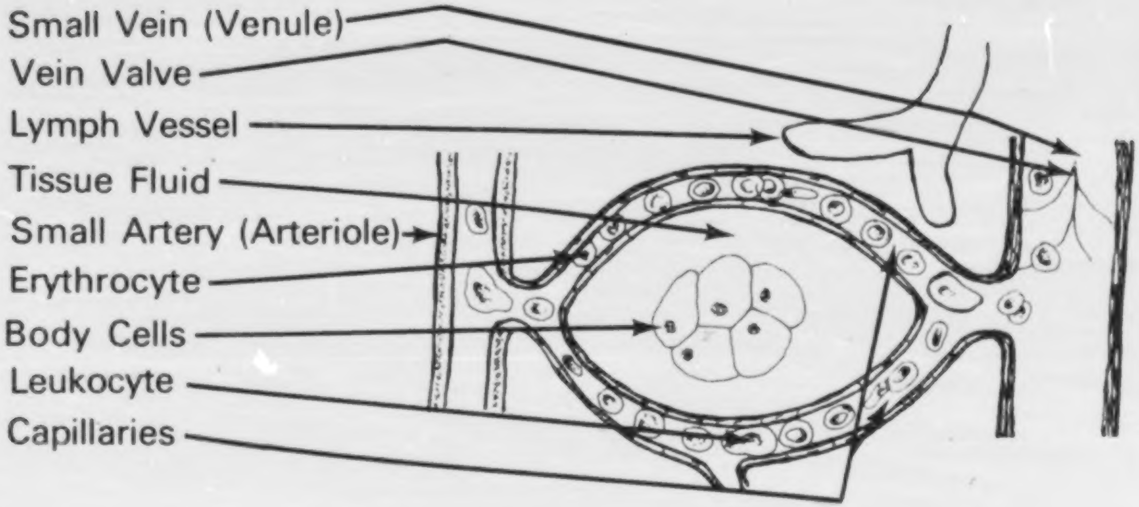
2. Atria contract, squeezing blood into Ventricles. AV node is stimulated, transmitting impulse to Bundle of His

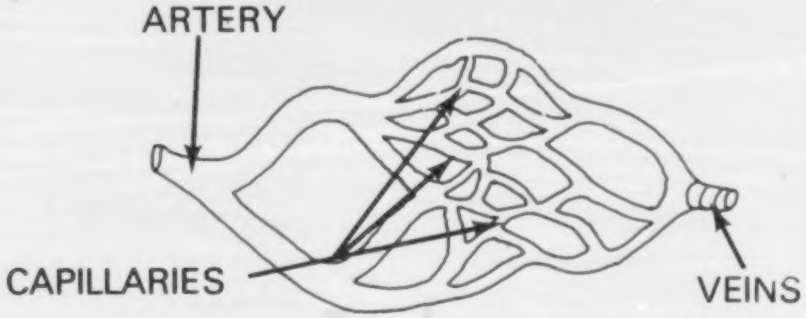
3. Ventricles contract, squeezing blood into Aorta and Pulmonary Arteries - Systole

Conduction System of the Heart

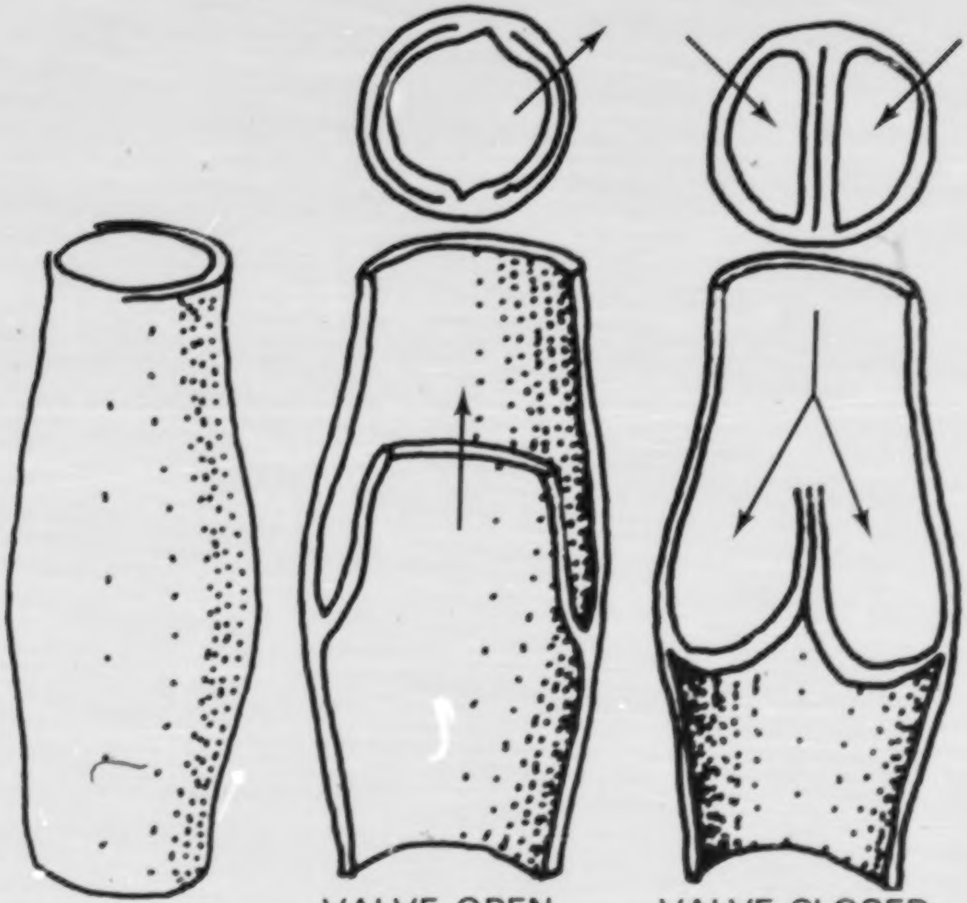

LEFT ATRIUM
SUPERIOR VENA CAVA
SINOATRIAL NODE
RIGHT ATRIUM
ATRIOVENTRICULAR NODE
ATRIOVENTRICULAR BUNDLE (Bundle of His)
RIGHT VENTRICLE
LEFT VENTRICLE

Capillary Function


Small Vein (Venule)
Vein Valve
Lymph Vessel
Tissue Fluid
Small Artery (Arteriole)
Erythrocyte
Body Cells
Leukocyte
Capillaries


ARTERY
CAPILLARIES
VEINS

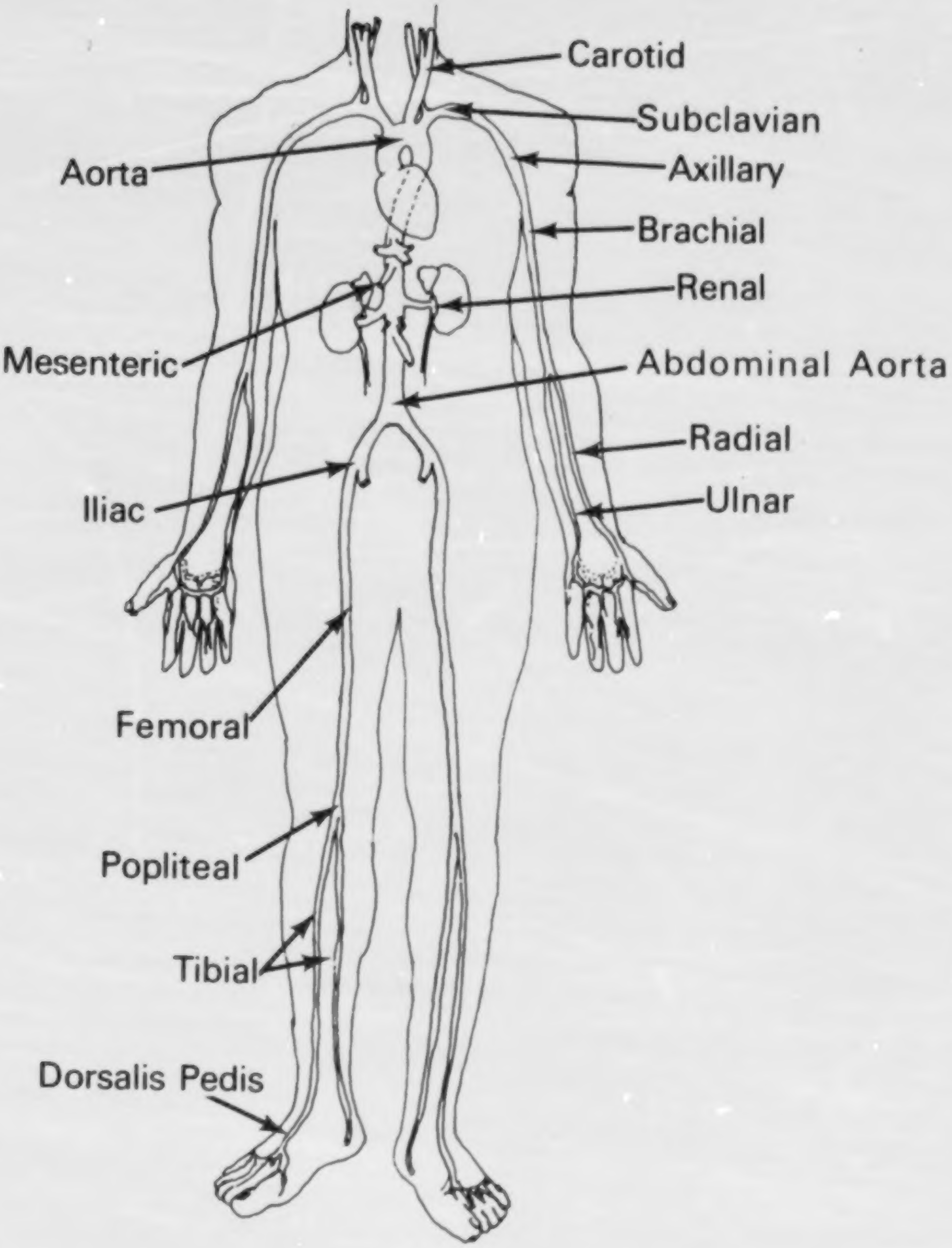
Bicuspid Valves



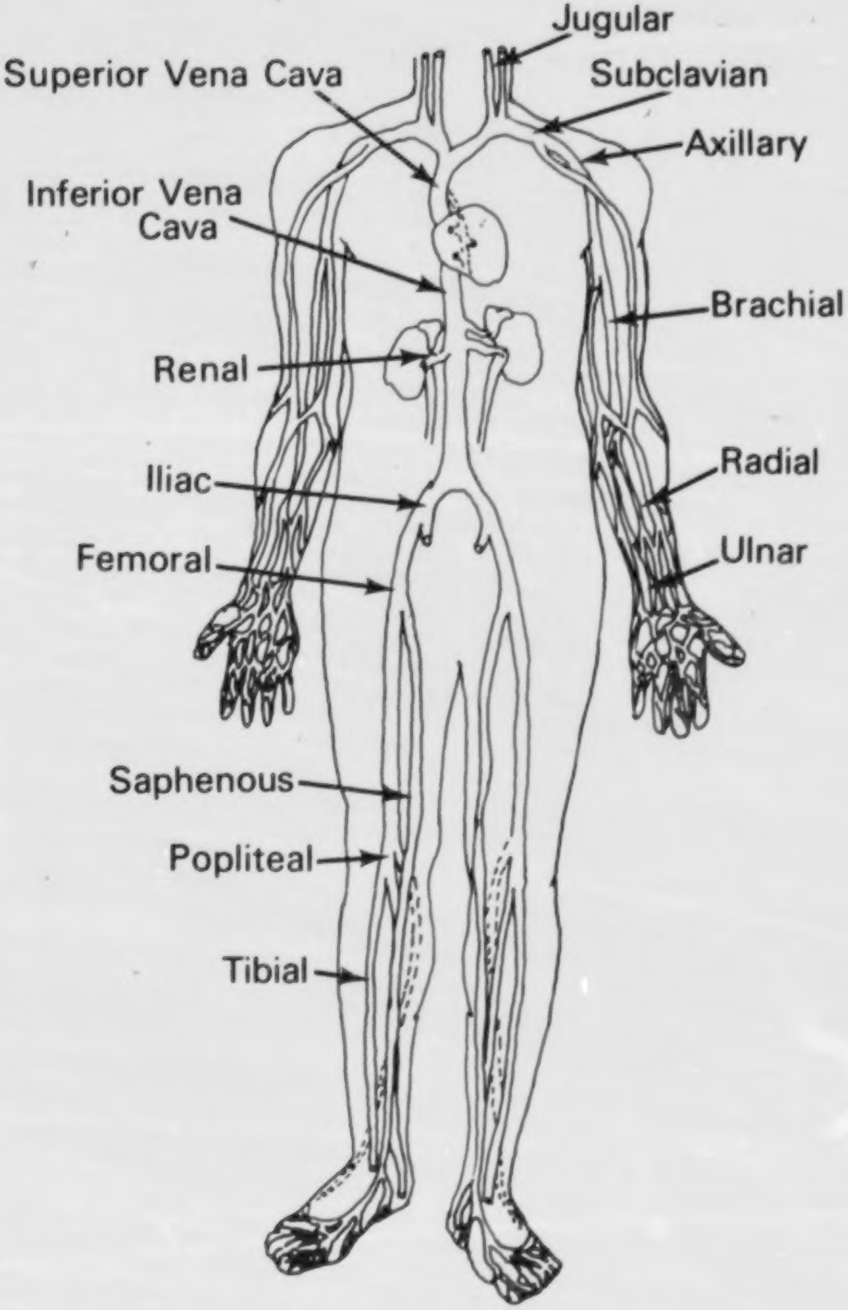
VALVE OPEN VALVE CLOSED

Veins contain bicuspid valves which open in the direction of the blood flow, but prevent backward flow when pockets become filled.

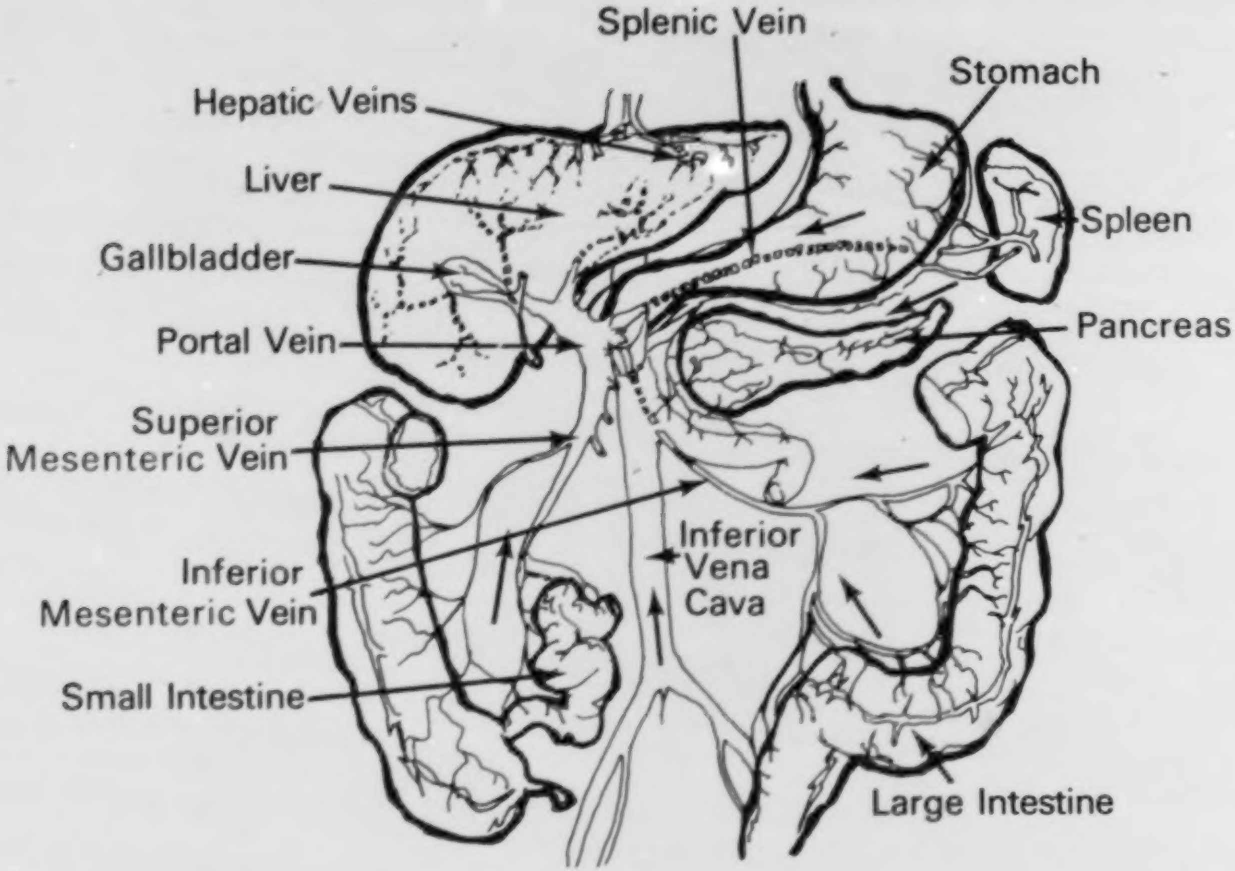
Principal Arteries


Carotid
Subclavian
Aorta
Axillary
Brachial
Renal
Mesenteric
Abdominal Aorta
Radial
Iliac
Ulnar
Femoral
Popliteal
Tibial
Dorsalis Pedis

Principal Veins


Jugular
Superior Vena Cava
Subclavian
Axillary
Inferior Vena Cava
Brachial
Renal
Radial
Iliac
Ulnar
Femoral
Saphenous
Popliteal
Tibial

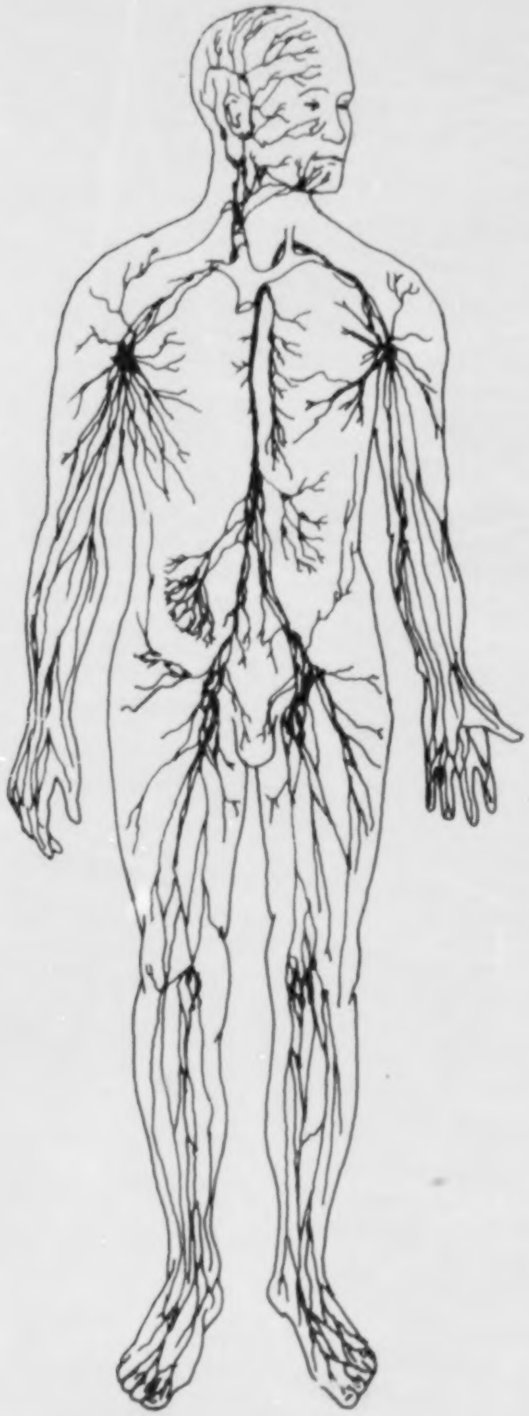
The Portal Circulation


Splenic Vein
Stomach
Hepatic Veins
Liver
Spleen
Gallbladder
Pancreas
Portal Vein
Superior Mesenteric Vein
Inferior Mesenteric Vein
Inferior Vena Cava
Small Intestine
Large Intestine

TM 10

N. I - 337-C

The Lymphatic Structures



CIRCULATORY SYSTEM
UNIT X

ASSIGNMENT SHEET #1--CIRCULATION

1. On a chart, trace the circulation of the blood throughout the body. Name the major arteries and veins.

2. On a model or chart, show the circulation of blood through the heart. Identify the coronary arteries.

N. I - 343-C

CIRCULATORY SYSTEM
UNIT X

TEST

1. Match the terms on the right to the correct definition.

______a. Flap of valves which open and close

______b. Pertaining to the heart

______c. Three-pointed; heart valve made up of three flaps

______d. Study of the heart

______e. Minute blood vessel between arterioles and venules, or a similar channel containing lymph

______f. Lining of the heart

______g. Very small vein

______h. Muscle of the heart

______i. Very small artery

______j. Covering of the heart

______k. One of the blood vessels carrying blood from the heart

______l. Upper chamber or compartment of the heart

______m. One of the blood vessels carrying blood to the heart

______n. Lower, pumping chamber of the heart

1. Ventricle
2. Vein
3. Arteriole
4. Capillary
5. Cusp
6. Cardiac
7. Endocardium
8. Pericardium
9. Tricuspid
10. Venule
11. Artery
12. Atrium
13. Myocardium
14. Cardiology

(NOTE: Answers to "o" through "bb" are listed on this page.)

______o. Heart valve comprised of two heavy flaps

______p. Circle of arteries around the base of the brain formed by communicating branches of cerebral arteries

______q. Main trunk of the arterial system; largest artery

______r. Pertaining to elimination of waste products

______s. Blood vessels which supply the walls of the heart

______t. Two-lobed gland of lymphatic tissue in upper part of the chest

______u. Pacemaker; small mass of specialized muscle fibers in the wall of the right atrium where the rhythm of the cardiac contraction is usually established

______v. Small bundles of special lymphoid tissue; also called lymph glands

______w. Mass of specialized muscle fibers located in the septum at the junction of the four chambers

______x. Network of spaces in the dura mater which drain blood from the brain into the jugular vein.

15. Septum
16. S-A node
17. Aorta
18. Venous sinuses
19. Thymus
20. Circle of Willis
21. Biscuspid
22. Coronary
23. A-V node
24. Systole
25. Diastole
26. Lymph nodes
27. Excretory
28. Blood pressure

______y. Wall down the middle of the heart that divides it into right and left sides

______z. Period of contraction of the heart

____aa. Period of rest in the heart between contractions

____bb. Pressure exerted by the blood on the wall of any vessel, usually the artery

2. List the parts of the circulatory system.

3. List four functions of the circulatory system.

a.

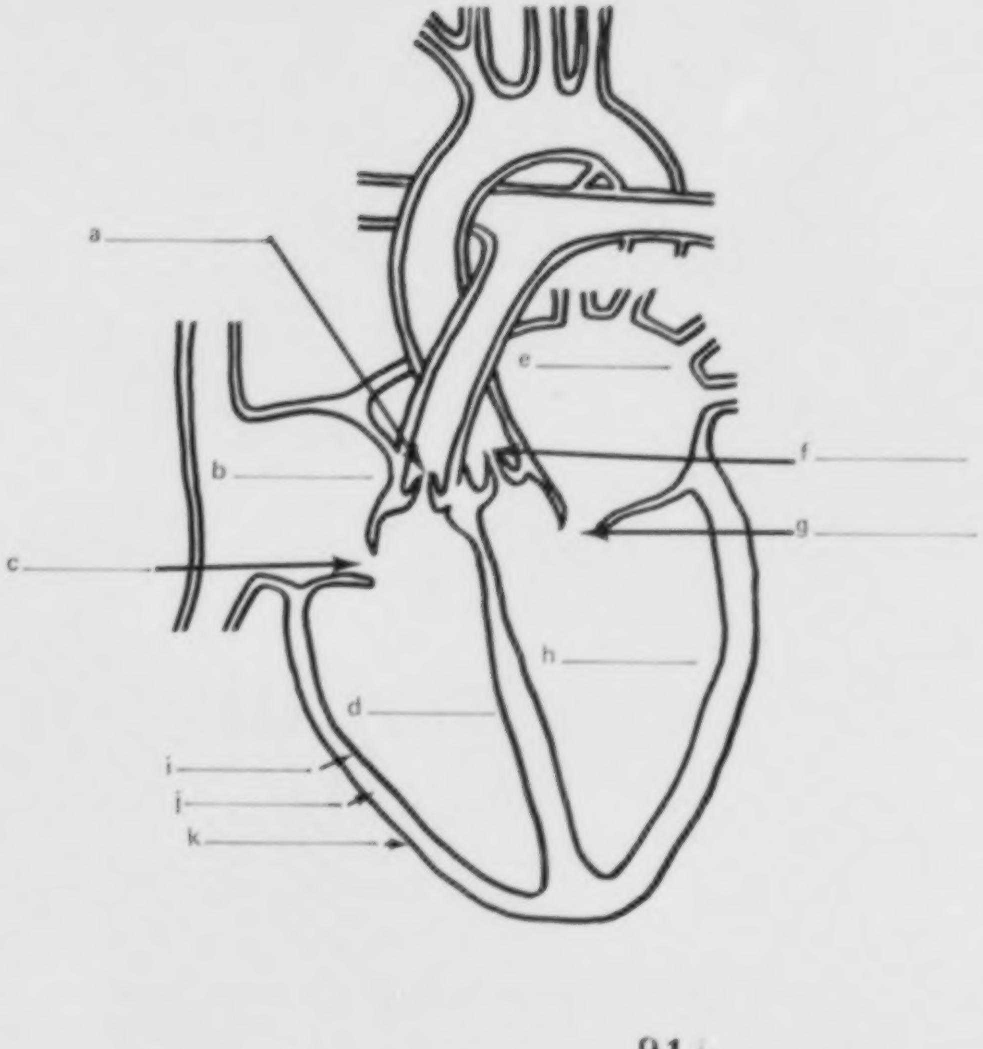
b.

c.

d.

4. Identify the structures of the heart on this diagram by writing the correct numbers on the blanks.

1) Right atrium
2) Right ventricle
3) Left atrium
4) Left ventricle
5) Endocardium
6) Tricuspid valve
7) Bicuspid valve
8) Pericardium
9) Aortic semilunar valve
10) Pulmonary semilunar valve
11) Myocardium



5. Describe the blood supply to the heart.

6. Discuss the physiology of the heart.

   a. Cardiac cycle

   b. Nerve control

   c. Nerve supply

   d. Conduction system

   e. Heart sounds and murmurs

7. Describe the structure and function of the blood vessels.

8. Trace the circulation of a drop of blood throughout the body giving the area where carbon dioxide is exchanged for oxygen and the area where food and oxygen is exchanged for waste products.

   a. Systemic

      1)

      2)

      3)

      4)

      5)

      6)

      7)

      8)

      9)

   b. Pulmonary

      1)

      2)

      3)

      4)

      5)

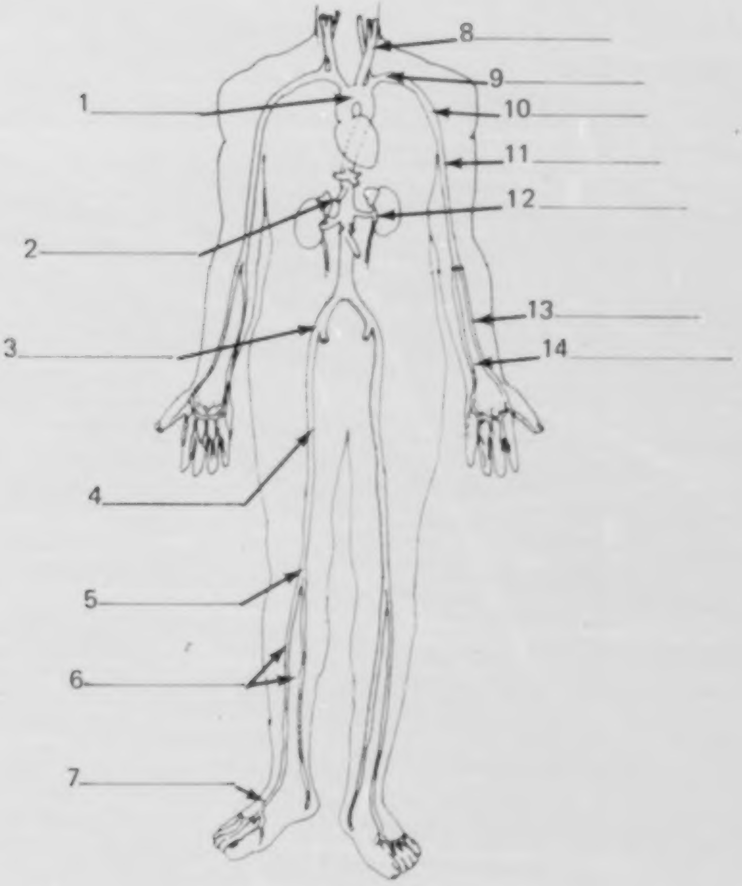
      6)

      7)

9. Locate the following arteries and veins on the diagrams by placing the appropriate letter on the lines.

a. Arteries

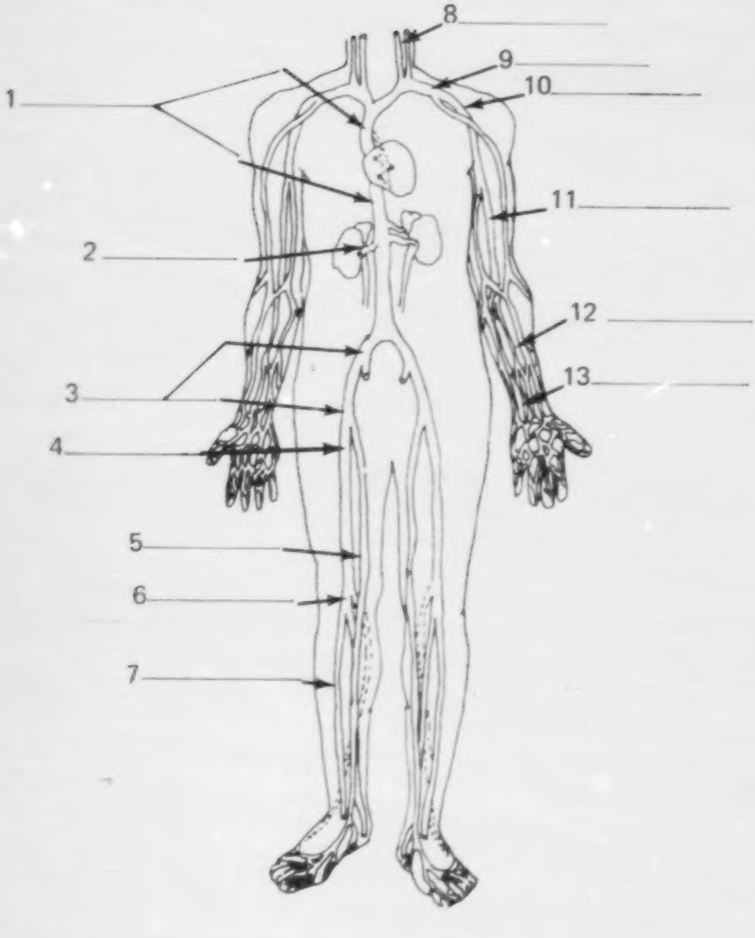
a) Femoral
b) Carotid
c) Axillary
d) Aorta
e) Subclavian
f) Ulnar
g) Tibial
h) Brachial
i) Mesenteric
j) Iliac
k) Radial
l) Popliteal
m) Renal
n) Dorsalis pedis



b. Veins

a) Jugular
b) Subclavian
c) Brachial
d) Saphenous
e) Tibial
f) Axillary
g) Popliteal

h) Vena cava--Superior, inferior
i) Renal
j) Radial
k) Iliac
l) Femoral
m) Ulnar


8
9
10
1
11
2
12
13
3
4
5
6
7

10. List major arteries and veins supplying the head.

    a. Arteries

    b. Veins

11. Trace the blood through the portal circulation.

12. Describe the lymphatic system.

13. List two functions of the lymph system.

    a.

    b.

14. Describe the spleen.

15. List four functions of the spleen.

    a.

    b.

    c.

    d.

16. Describe the pulse.

17. List three sites for taking pulse.

    a.

    b.

    c.

18. List five factors that influence pulse rate.

    a.

    b.

    c.

    d.

    e.

19. Discuss the measurement of blood pressure giving the name of the instrument used for measurement.

20. List eight ways to help prevent heart and circulatory ailments.

    a.

    b.

    c.

    d.

    e.

    f.

    g.

    h.

CIRCULATORY SYSTEM
UNIT X

ANSWERS TO TEST

1. a. 5
   b. 6
   c. 9
   d. 14
   e. 4
   f. 7
   g. 10
   h. 13
   i. 3
   j. 8
   k. 11
   l. 12
   m. 2
   n. 1
   o. 21
   p. 20
   q. 17
   r. 27
   s. 22
   t. 19
   u. 16
   v. 26
   w. 23
   x. 18
   y. 15

- z. 24
- aa. 25
- bb. 28

2. a. Cardiovascular system
    - 1) Heart
    - 2) Blood vessels

   b. Lymphatic system
    - 1) Lymph vessels
    - 2) Accessory organs

   c. The blood
3. Any four of the following
   - a. Transportation of food and oxygen to body cells
   - b. Transportation of waste products to excretory organs
   - c. Distribution of hormones and antibodies
   - d. Aid in control of body temperature
   - e. Maintenance of homeostasis
4. a. 10
   - b. 1
   - c. 6
   - d. 2
   - e. 3
   - f. 9
   - g. 7
   - h. 4
   - i. 5
   - j. 11
   - k. 8
5. Description should include:
   - a. Coronary arteries branch off the aorta just above the aortic semilunar valve
   - b. Left branch supplies the left atrium and ventricle; right branch supplies the right side

c. Coronary arteries are capable of increasing or decreasing the blood supply as needed; demands made upon the heart by exercise, emotional stress, sleep, and other body actions influence the heart's need for oxygen

d. Coronary arteries become smaller as they enter the heart wall and nourish the tissue through capillaries, then drain into venules and coronary veins that carry the blood to the right atrium

6. Discussion should include:

a. Two phases, the systole and the diastole; while the atria contract, the ventricles rest; when the ventricles contract, the atria relax and fill with blood

b. Heart capable of contracting rhythmically even though its outside nerve supply may be interrupted or destroyed; without nerve connection the heart will beat at slower rate

c. Nerve supply

1) Part of autonomic nervous system

2) Complex system with both accelerating and braking controls

d. Combined nerve and muscle tissue which regulates the order of contractions

1) Beginning of the contraction is in the S-A node (sinoatrial)

2) Contraction wave passes through the atrial muscles causing them to contract

3) A-V node (atrioventricular) is stimulated and transmits the wave to the bundle of His which stimulates the entire ventricular musculature to contract

e. Heart sounds and murmurs

1) Normal heart sounds are usually described by two syllables, lubb and dupp

2) First or systolic sound (lubb) is due to closure of the cuspid valves and contraction of the ventricles

3) Second or diastolic sound (dupp) is due to closure of the semilunar valves

4) Murmurs, abnormal heart sounds, may be due to faulty valve or one scarred by disease

7. Description should include:

   a. Arteries

      1) Thickest walls of all blood vessels; more muscular than veins; walls three-layered with central layer of muscular tissue thickest

      2) Carry blood from the pumping chambers (ventricles) to the organs

   b. Capillaries

      1) Single layer of endothelial cells forms a tube barely large enough to permit passage of blood cells

      2) Materials necessary to life of cells pass through capillary walls into tissues; waste products are absorbed from tissues

   c. Veins

      1) Less muscular vessels than arteries; equipped with one-way valves which permit the blood to flow in only one direction

      2) Transport blood back to the heart under low pressure

8. a. Systemic

      1) Left ventricle

      2) Aorta

      3) Arteries

      4) Arterioles

      5) Capillaries--Food and oxygen exchanged for waste products and carbon dioxide

      6) Venules

      7) Veins

      8) Inferior or superior vena cava

      9) Right atrium

   b. Pulmonary

      1) Right ventricle

      2) Pulmonary artery

      3) Arterioles

4) Capillaries--Carbon dioxide is exchanged for oxygen

5) Venules

6) Pulmonary vein

7) Left atrium

9.

a. Arteries		b. Veins	
1)	d	1)	h
2)	i	2)	i
3)	j	3)	k
4)	a	4)	l
5)	l	5)	d
6)	g	6)	g
7)	n	7)	e
8)	b	8)	a
9)	e	9)	b
10)	c	10)	f
11)	h	11)	c
12)	m	12)	j
13)	k	13)	m
14)	f		

10. a. Arteries

1) Carotid

2) Temporal

3) Facial

4) Occipital

5) Cerebral

- b. Veins
  - 1) Facial
  - 2) Temporal
  - 3) Occipital
  - 4) Cerebral
  - 5) Jugular

11. a. Veins from the stomach, intestine, spleen, and pancreas empty into one vessel, the portal vein

    b. Portal vein carries the blood loaded with digested food to the liver which extracts food materials for storage and modification including removal of toxins

    c. Blood leaves the liver through the hepatic veins which empty into the inferior vena cava

12. Description should include:

    a. Network of very small lymph capillaries collects excess tissue fluid and certain waste products from the body cells

    b. Lymph fluid resembles plasma in composition but contains less protein

    c. Lymph drainage from the intestinal area may be milky in appearance due to the high fatty content after a meal

    d. Lymph capillaries empty into progressively larger vessels and finally drain into the thoracic duct and the right lymphatic duct

    e. The two main lymphatic channels empty into the veins at the base of the neck where the lymph mixes with the blood plasma

    f. Flow of lymph is slow and is aided by muscular contractions and by valves which keep it from flowing backward

    g. Lymph nodes are found at intervals along the lymph system

    h. Some body organs, tonsils, adenoids, and spleen, are formed of lymphoid tissue

13. Any two of the following

    a. Chief function--Filtration of excess fluid, bacteria, waste products, and other foreign substances

    b. Manufacture of lymphocytes and monocytes

    c. Absorption of digested fats from small intestine

14. Description should include:
    a. Largest mass of lymphoid tissue
    b. Located in upper abdomen behind stomach
    c. Can be surgically removed without ill effect
15. Any four of the following
    a. Blood storage reservoir
    b. Destroys old red blood cells
    c. Filters out dead blood cells and cancer cells
    d. Destroys bacteria
    e. Manufactures lymphocytes
    f. Produces antibodies
16. Description should include:
    a. Ventricles pump blood regularly into the arteries about seventy to eighty times per minute
    b. Force of the contraction sends a wave of increased pressure called the pulse along the arteries
    c. Pulse can be felt with the fingers in arteries near the surface
17. Any three of the following
    a. Radial artery on thumb side of wrist
    b. Carotid artery in side of neck
    c. Temporal artery in front of ear
    d. Mandibular artery in notch on lower jawbone (mandible)
18. Any five of the following
    a. Size--Somewhat faster in small people
    b. Sex--Slightly faster in women
    c. Age--Higher in newborn infants with rate slowing as child matures
    d. Activity--Muscular activity causes increase
    e. Emotions--Emotional disturbances may cause increase

   f. Infection or fever--May increase pulse rate

   g. Thyroid secretion

   h. Medication or illness

19. Discussion should include:

   a. Measurement of blood pressure is one way to aid in evaluation of a person's health

   b. Usually measurement is made only of the arterial pressure

   c. Two measurements are made

      1) Systolic pressure--Occurs when the heart muscle contracts

      2) Diastolic pressure--Occurs during relaxation of the heart muscle

   d. Instrument used--Sphygmomanometer which is essentially a dial or column of mercury connected to an inflatable cuff

   e. Blood pressure expressed in millimeters of mercury

20. Any eight of the following

   a. Proper nutrition to maintain desirable weight for age and height

      1) Obesity does not directly cause heart disease but it does place an unnecessary strain on the heart

      2) Certain food elements are necessary for the formation of blood, maintenance of homeostasis and acid-base balance, and clotting of blood

   b. Regular exercise

      1) Exercise does not damage the heart as long as the individual is in good physical health and exercises regularly

      2) Exercise aids circulation

      3) Sudden bursts of strenuous activity may damage the heart

   c. Avoiding sudden extremes of temperature--Cold especially may affect the blood vessels and precipitate a heart attack

   d. Temperate habits in use of alcohol and tobacco--Both have a damaging effect on the heart and blood vessels

e. Regular physical evaluation

  1) Periodic physical examinations of children assist in early detection of heart disease

  2) In adults periodic examinations aid in early detection of abnormal conditions

f. Prevention and care of infections--Definite relationship between streptococcal infections of the throat and heart disease

g. Adequate rest--Aids heart and body to renew itself

h. Maintenance of good posture--Gives heart and lungs sufficient area in which to function

i. Avoidance of long periods of sitting with legs crossed which interferes with return flow of blood from lower extremities

j. Avoidance of circular garters or other apparel which interferes with circulation

THE RESPIRATORY SYSTEM
UNIT XI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe the structures and functions of the respiratory tract as well as match terms to the correct definition. The student should be able to list types of respirations and factors that affect respiration and discuss some practical ways of protecting the respiratory system. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the respiratory system to the correct definition.
2. Name the fundamental purposes of breathing.
3. Differentiate between the two kinds of respiration.
4. Identify the structures of the respiratory system on a diagram.
5. Describe the structure of the nasal cavities.
6. List two functions of the nasal cavities.
7. Describe the structure of the pharynx.
8. List two functions of the pharynx and pharyngeal structures.
9. Describe the structure of the larynx.
10. List two functions of the larynx and laryngeal structures.
11. Describe the structure of the trachea.
12. List two functions of the trachea.
13. Describe the structure of the bronchi.
14. List two functions of the bronchi and bronchial structures.
15. Describe the structure of the lungs.
16. Discuss the mechanics of breathing.
17. List the average rate of respirations and six factors that affect respiratory rate.

18. Discuss ways breathing is controlled.
19. Describe four types of respiration.
20. List six practical aspects of protecting the respiratory system.
21. Complete a report on an outside reading concerning respiration.

THE RESPIRATORY SYSTEM
UNIT XI

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Make transparencies.

   D. Discuss terminal and specific objectives.

   E. Discuss information sheet.

   F. Refer to Transparency #1 when needed throughout information sheet.

   G. Discuss assignment sheets.

   H. Assist students in locating references for assignment sheets.

   I. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Complete assignment sheets.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1--The Respiratory Tract

      2. TM 2--Diffusion of Oxygen and Carbon Dioxide

D. Assignment sheets

  1. Assignment Sheet #1--Identifying Structures
  2. Assignment Sheet #2--Outside Reading

E. Test

F. Answers to test

II. References:

A. Memmler, Ruth L. and Ruth B. Rada. *The Human Body in Health and Disease.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1970.

B. Thompson, Ella M. and Caroline Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Additional materials:

A. Films

  1. "Mechanism of Breathing," Encyclopedia Brittanica Films.
  2. "Learning About the Nose," State Department of Health.
  3. "Point of View (Smoking)," State Department of Health.

B. Filmstrip--"Respiratory System," Robert J. Brady Company.

THE RESPIRATORY SYSTEM
UNIT XI

INFORMATION SHEET

I. Terms and definitions

   A. Respiration--Exchange of oxygen and carbon dioxide in the body

   B. Breathing--Alternate inspiration and expiration of air

   C. Inspiration--Drawing of air into the lungs

   D. Expiration--Expulsion of air from the lungs

   E. Sinuses--Eight cavities in the skull connected with the nasal cavities

   F. Pharynx--Muscular passageway for food and liquids into the esophagus and for air into the lungs

   G. Cilia--Hairlike processes projecting from epithelial cells

   H. Ciliated--Having cilia

   I. Adenoids--Masses of lymphoid tissue found in the nasopharynx

   J. Tonsils--Masses of lymphoid tissue found in the oropharynx

   K. Eustachian tubes--Passageways which connect the middle ear with the pharynx

   L. Larynx--Voice box

   M. Sac--Cavity or pouch; baglike part of an organ

   N. Hilum--Notch or depression on the inner surface of the lungs where the arteries, veins, bronchi, and nerves enter

   O. Ventilation--Supplying of oxygen to the body through the lungs

II. Fundamental purposes of breathing

   A. Supply oxygen to the individual tissue cells

   B. Remove the gaseous waste product, carbon dioxide

III. Kinds of respiration

   A. External--The exchange of oxygen for carbon dioxide within the alveoli of the lungs

   (NOTE: This is also called lung breathing.)

INFORMATION SHEET

B. Internal--The exchange of oxygen for carbon dioxide within the cells (NOTE: This is also called cell breathing.)

IV. Structures of the respiratory system (Transparency 1)

A. Frontal sinus

B. Nasal cavity

C. Sphenoidal sinus

D. Nasopharynx

E. Oropharynx

F. Epiglottis

G. Laryngeal pharynx

H. Larynx and vocal folds

I. Trachea

J. Lungs

K. Bronchi

L. Diaphragm

M. Terminal bronchiole

N. Alveoli

V. Structure of the nasal cavities

A. Two spaces (nasal cavities) separated by a partition (nasal septum)

B. Three small bones, the turbinates or conchae, project into each nasal cavity

C. The nasal cavities are lined with a ciliated mucous membrane

VI. Functions of the nasal cavities

A. The removal of foreign bodies, such as dust particles and bacteria, which are filtered out by the cilia or trapped on the surface of the mucous membrane

B. The warming and moistening of the air before it reaches the lungs

C. The sense of smell

INFORMATION SHEET

VII. Structure of the pharynx

   A. Nasopharynx--Upper portion containing the adenoids

   B. Oropharynx--Middle section behind the mouth containing the tonsils and the openings of the eustachian tubes

   C. Laryngeal pharynx--Lower section with openings to larynx and esophagus

VIII. Functions of the pharynx and pharyngeal structures

   A. Passageway for food, fluids, and air

   B. Adenoids and tonsils serve as filters for microorganisms and other foreign substances

   C. Eustachian tubes equalize the pressure in the middle ear

IX. Structure of the larynx

   A. Framework of cartilage held together by ligaments

   B. Usually larger in the male

   C. At the upper end are the vocal cords, two triangular-shaped membranous folds which extend from front to back

   D. Entrance to the larynx is guarded by the epiglottis

X. Functions of the larynx and laryngeal structures

   A. Passageway for air

   B. Production of sound (voice)

   C. Epiglottis prevents food from entering larynx

XI. Structure of the trachea

   A. Tube with a cartilage framework extending from the larynx to the bronchi

   B. Lining--Ciliated mucous membrane

XII. Functions of the trachea

   A. Conduction of air to and from the lungs

   B. Cilia trap inhaled foreign particles and carry them out of the respiratory tract by a wavelike movement

INFORMATION SHEET

XIII. Structure of the bronchi

A. As the trachea enters the chest cavity, it divides into two smaller tubes, the right and left bronchus

B. As the bronchi enter the lungs at the hilum, they divide into smaller and smaller branches forming the bronchial tree

C. The smallest branches, called bronchioles, have walls composed of smooth muscle and a lining of mucous membrane

D. At the end of each bronchiole there is a cluster of air sacs, resembling a bunch of grapes, known as the alveoli

E. Each air sac, alveolus, is lined with epithelium one cell layer thick and surrounded by capillary network

XIV. Functions of bronchi and bronchial structures

A. Passageway of oxygen to alveoli

B. In the alveoli, the exchange of gases (oxygen and carbon dioxide) takes place (Transparency 2)

XV. Structure of the lungs

A. Two cone-shaped organs which nearly fill the chest cavity

B. The top of the lung is called the apex; the lower, wider portion that fits over the diaphragm is called the base

C. Comprised of spongy tissue filled with alveoli, nerves, and blood and lymph vessels

D. Divided into sections called lobes, the right having three lobes and the left two

E. The covering is a smooth, double-layered sac, pleura, which provides moisture to prevent friction during movement

XVI. Mechanics of breathing

A. The lungs do not move by themselves during the process of breathing; they are inflated and deflated by the muscles which surround them

B. The diaphragm and the intercostal muscles contract, creating a vacuum; air rushes in to inflate the lungs

(NOTE: This is called inspiration.)

INFORMATION SHEET

C. When the diaphragm and intercostal muscles relax, the lungs are compressed and the air flows out

(NOTE: This is called expiration.)

XVII. Respiratory rates

(NOTE: One respiration consists of a single inspiration and a single expiration.)

A. Average respiratory rate for an adult varies from 14 to 20 times per minute

(NOTE: Respiratory rates are normally higher in children.)

B. Factors that affect rate

1. Age
2. Sex
3. Position
4. Exercise
5. Temperature
6. Drugs
7. Physical condition
8. Emotions

XVIII. Control of breathing

A. Controlled by the respiratory center of the brain which is located in the medulla, immediately above the spinal cord

B. Breathing also affected by the amount of carbon dioxide in the blood

C. A person can control his breathing for a time, although breathing is usually an automatic process

XIX. Types of respiration

A. Eupnea--Normal breathing

B. Apnea--Temporary cessation of breathing

C. Dyspnea--Painful or difficult breathing

D. Hyperpnea--Increased rate and depth of breathing

INFORMATION SHEET

- E. Tachypnea--Rapid, shallow breathing
- F. Orthopnea--Difficult breathing relieved only by sitting or standing erect

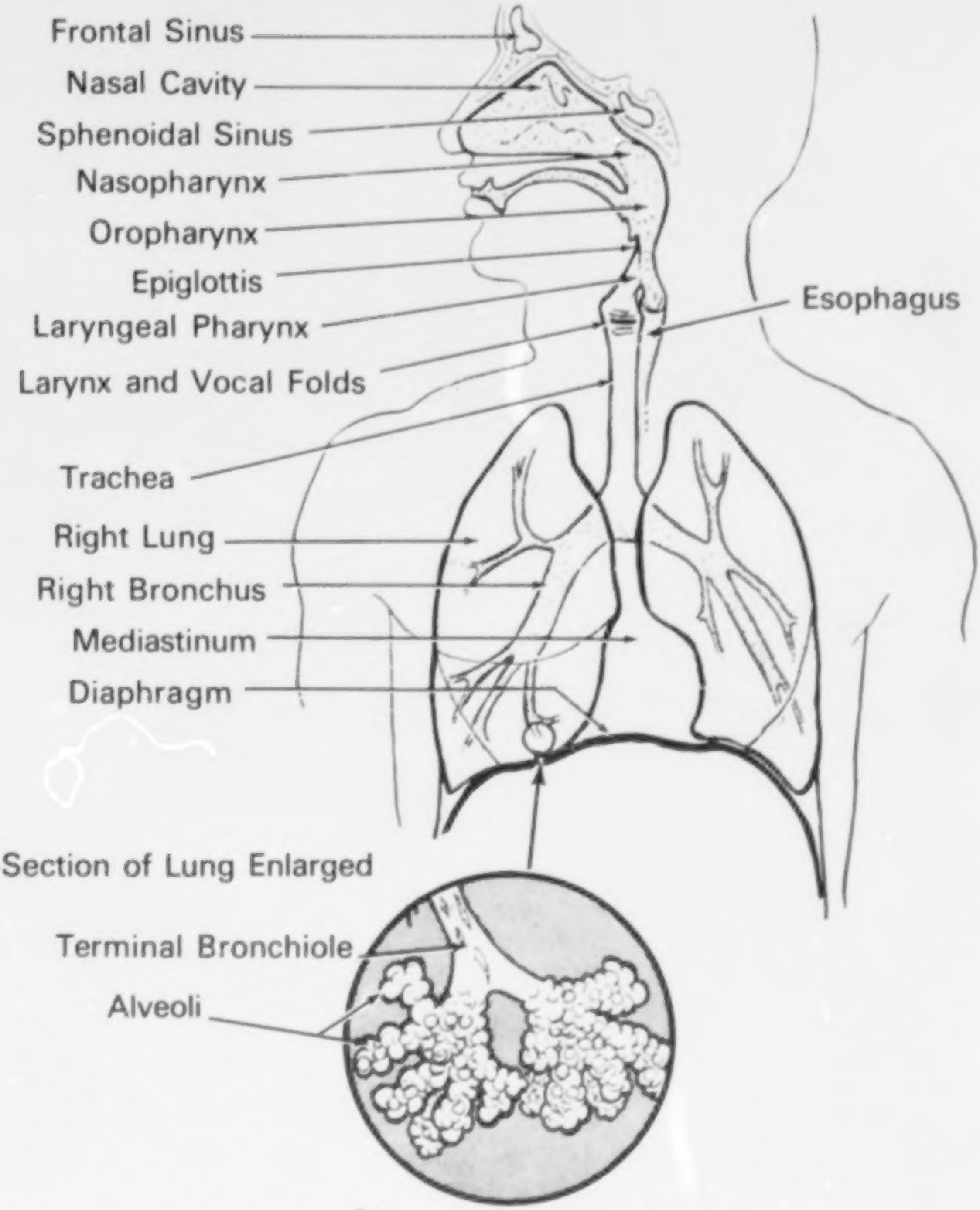
XX. Some practical aspects of protecting the respiratory system

- A. Maintain a beneficial environment
  1. Sufficient heating or cooling to maintain optimum temperature
  2. Dress according to weather conditions
  3. Proper humidity level
  4. Filtering of air to remove dust, pollen, and other pollutants

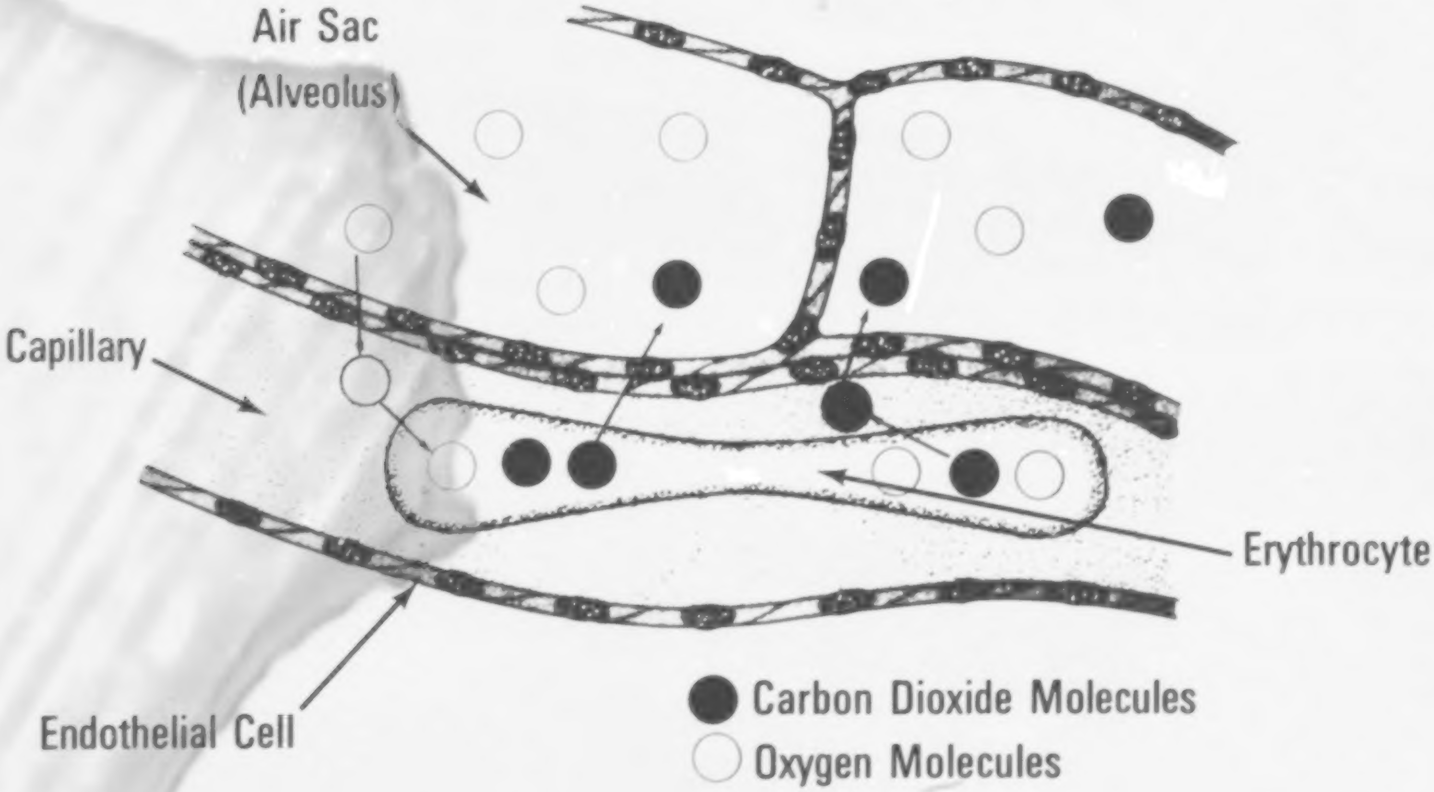
     (NOTE: Air filters should be clean to be effective.)
  5. Avoidance of drafts
  6. Good ventilation with adequate supply of fresh, circulating air, including proper venting of heaters
- B. Decrease smoking or stop entirely
- C. Use face masks when working in areas of pollution

  (NOTE: Chemicals such as paint, pesticides, disinfectants, or building insulation are potential sources of pollutants.)
- D. Use aerosol sprays, such as deodorants or hair spray, carefully
- E. Use prescribed medications properly
- F. Maintain good posture to give chest greater capacity and to permit diaphragm to function properly
- G. Exercise adequately to increase respiration and air exchange in the lungs
- H. Treat respiratory ailments promptly and avoid spreading infection to others

The Respiratory Tract


Frontal Sinus
Nasal Cavity
Sphenoidal Sinus
Nasopharynx
Oropharynx
Epiglottis
Laryngeal Pharynx
Larynx and Vocal Folds
Trachea
Right Lung
Right Bronchus
Mediastinum
Diaphragm
Esophagus
Section of Lung Enlarged
Terminal Bronchiole
Alveoli

Diffusion of Oxygen and Carbon Dioxide


Air Sac
(Alveolus)
Capillary
Erythrocyte
Endothelial Cell
● Carbon Dioxide Molecules
○ Oxygen Molecules

THE RESPIRATORY SYSTEM
UNIT XI

ASSIGNMENT SHEET #1--IDENTIFYING STRUCTURES

1. Using a wall chart or model, identify the structures of the respiratory system.
2. Tell how the body gets its oxygen by describing the correlation between the respiratory and circulatory systems.

THE RESPIRATORY SYSTEM
UNIT XI

ASSIGNMENT SHEET #2--OUTSIDE READING

Find an article concerning respiration in a current newspaper or magazine. Write a brief report about the article. Tell how your study of the respiratory system makes the article more relevant to you.

THE RESPIRATORY SYSTEM
UNIT XI

TEST

1. Match the terms on the right to the correct definition.

_____a. Exchange of oxygen and carbon dioxide in the body

_____b. Supplying of oxygen to the body through the lungs

_____c. Alternate inspiration and expiration of air

_____d. Notch or depression on the inner surface of the lungs where the arteries, veins, bronchi, and nerves enter

_____e. Drawing of air into the lungs

_____f. Cavity or pouch; baglike part of an organ

_____g. Expulsion of air from the lungs

_____h. Voice box

_____i. Eight cavities in the skull connected with the nasal cavities

_____j. Passageways which connect the middle ear with the pharynx

_____k. Muscular passageway for food and liquids into the esophagus and for air into the lungs

_____l. Masses of lymphoid tissue found in the oropharynx

_____m. Having cilia

_____n. Masses of lymphoid tissue found in the nasopharynx

_____o. Hairlike processes projecting from epithelial cells

1. Cilia
2. Eustachian tubes
3. Hilum
4. Sinuses
5. Inspiration
6. Respiration
7. Tonsils
8. Pharynx
9. Ventilation
10. Sac
11. Larynx
12. Adenoids
13. Ciliated
14. Expiration
15. Breathing

2. Name the fundamental purposes of breathing.

   a.

   b.

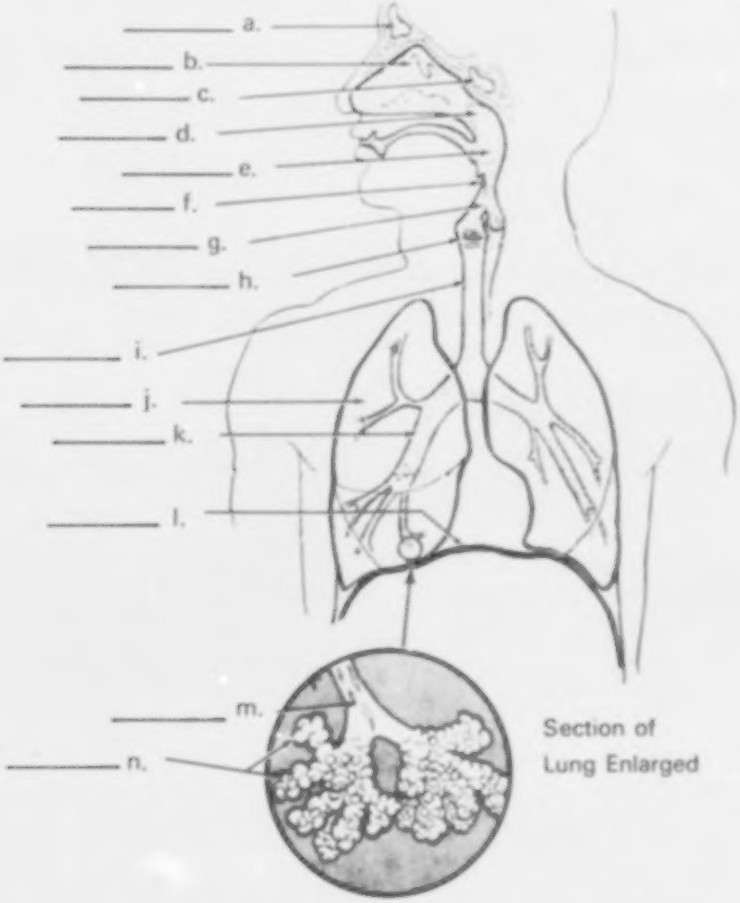
3. Differentiate between the two kinds of respiration by placing an "E" to the left of the definition of external and an "I" to the left of the definition of internal respiration.

   ______a. The exchange of oxygen for carbon dioxide within the cells

   ______b. The exchange of oxygen for carbon dioxide within the alveoli of the lungs

4. Identify the structures of the respiratory system on the following diagram by placing the numbers of the structure in the correct blank.

1) Alveoli
2) Diaphragm
3) Epiglottis
4) Frontal sinus
5) Laryngeal pharynx
6) Larynx and vocal folds
7) Nasal cavity
8) Nasopharynx
9) Oropharynx
10) Right bronchus
11) Right lung
12) Sphenoidal sinus
13) Terminal bronchiole
14) Trachea



5. Describe the structure of the nasal cavities.

6. List two functions of the nasal cavities.

   a.

   b.

7. Describe the structure of the pharynx.

8. List two functions of the pharynx and pharyngeal structures.

   a.

   b.

9. Describe the structure of the larynx.

10. List two functions of the larynx and laryngeal structures.

   a.

   b.

11. Describe the structure of the trachea.

12. List two functions of the trachea.

   a.

   b.

13. Describe the structure of the bronchi.

14. List two functions of the bronchi and bronchial structures.

    a.

    b.

15. Describe the structure of the lungs.

16. Discuss the mechanics of breathing.

17. List the average rate of respirations and six factors that affect respiratory rate.

    a.

    b. Factors

        1)

        2)

        3)

        4)

        5)

        6)

18. Discuss ways breathing is controlled.

19. Describe four types of respiration.

    a. Apnea

    b. Hyperpnea

c. Tachypnea

d. Eupnea

20. List six practical aspects of protecting the respiratory system.

a.

b.

c.

d.

e.

f.

21. Complete a report on an outside reading concerning respiration.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

THE RESPIRATORY SYSTEM
UNIT XI

ANSWERS TO TEST

1. a. 6
   b. 9
   c. 15
   d. 3
   e. 5
   f. 10
   g. 14
   h. 11
   i. 4
   j. 2
   k. 8
   l. 7
   m. 13
   n. 12
   o. 1
2. a. Supply oxygen to the individual tissue cells
   b. Remove the gaseous waste product, carbon dioxide
3. a. I
   b. E
4. a. 4
   b. 7
   c. 12
   d. 8
   e. 9

f. 3

g. 5

h. 6

i. 14

j. 11

k. 10

l. 2

m. 13

n. 1

5. Description should include:

   a. Two spaces (nasal cavities) separated by a partition (nasal septum)

   b. Three small bones, the turbinates or conchae, project into each nasal cavity

   c. The nasal cavities are lined with a ciliated mucous membrane

6. Any two of the following:

   a. The removal of foreign bodies, such as dust particles and bacteria, which are filtered out by the cilia or trapped on the surface of the mucous membrane

   b. The warming and moistening of the air before it reaches the lungs

   c. The sense of smell

7. Description should include:

   a. Nasopharynx–Upper portion containing the adenoids

   b. Oropharynx–Middle section behind the mouth containing the tonsils and the openings of the eustachian tubes

   c. Laryngeal pharynx–Lower section with openings to larynx and esophagus

8. Any two of the following

   a. Passageway for food, fluids, and air

   b. Adenoids and tonsils serve as filters for microorganisms and other foreign substances

   c. Eustachian tubes equalize the pressure in the middle ear

9. Description should include:

   a. Framework of cartilage held together by ligaments

   b. Usually larger in the male

   c. At the upper end are the vocal cords, two triangular-shaped membranous folds which extend from front to back

   d. Entrance to the larynx is guarded by the epiglottis

10. Any two of the following:

   a. Passageway for air

   b. Production of sound (voice)

   c. Epiglottis prevents food from entering larynx

11. Description should include:

   a. Tube with a cartilage framework extending from the larynx to the bronchi

   b. Lining–Ciliated mucous membrane

12. a. Conduction of air to and from the lungs

   b. Cilia trap inhaled foreign particles and carry them out of the respiratory tract by a wavelike movement

13. Description should include:

   a. As the trachea enters the chest cavity, it divides into two smaller tubes, the right and left bronchus

   b. As the bronchi enter the lungs at the hilum, they divide into smaller and smaller branches forming the bronchial tree

   c. The smallest branches, called bronchioles, have walls composed of smooth muscle and a lining of mucous membrane

   d. At the end of each bronchiole there is a cluster of air sacs, resembling a bunch of grapes, known as the alveoli

   e. Each air sac, alveolus, is lined with epithelium one cell layer thick and surrounded by capillary network

14. a. Passageway of oxygen to alveoli

   b. In the alveoli, the exchange of gases (oxygen and carbon dioxide) takes place

15. Description should include:

    a. Two cone-shaped organs which nearly fill the chest cavity

    b. The top of the lung is called the apex; the lower, wider portion that fits over the diaphragm is called the base

    c. Comprised of spongy tissue filled with alveoli, nerves, and blood and lymph vessels

    d. Divided into sections called lobes, the right having three lobes and the left two

    e. The covering is a smooth, double-layered sac, pleura, which provides moisture to prevent friction during movement

16. Discussion should include:

    a. The lungs do not move by themselves during the process of breathing; they are inflated and deflated by the muscles which surround them

    b. The diaphragm and the intercostal muscles contract, creating a vacuum; air rushes in to inflate the lungs

    c. When the diaphragm and intercostal muscles relax, the lungs are compressed and the air flows out

17. a. 14 to 20 times per minute

    b. Any five of the following

        1) Age

        2) Sex

        3) Position

        4) Exercise

        5) Temperature

        6) Drugs

        7) Physical condition

        8) Emotions

18. Discussion should include:

    a. Controlled by the respiratory center of the brain which is located in the medulla, immediately above the spinal cord

    b. Breathing also affected by the amount of carbon dioxide in the blood

  c. A person can control his breathing for a time, although breathing is usually an automatic process

19. Description should include:

  a. Temporary cessation of breathing

  b. Increased rate and depth of breathing

  c. Rapid, shallow breathing

  d. Normal breathing

20. Any six of the following

  a. Maintain a beneficial environment

    1) Sufficient heating or cooling to maintain optimum temperature

    2) Dress according to weather conditions

    3) Proper humidity level

    4) Filtering of air to remove dust, pollen, and other pollutants

    5) Avoidance of drafts

    6) Good ventilation with adequate supply of fresh, circulating air, including proper venting of heaters

  b. Decrease smoking or stop entirely

  c. Use face masks when working in areas of pollution

  d. Use aerosol sprays, such as deodorants or hair spray, carefully

  e. Use prescribed medications properly

  f. Maintain good posture to give chest greater capacity and to permit diaphragm to function properly

  g. Exercise adequately to increase respiration and air exchange in the lungs

  h. Treat respiratory ailments promptly and avoid spreading the infection to others

21. Evaluated to the satisfaction of the instructor.

THE URINARY SYSTEM
UNIT XII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list the organs of the excretory system and their functions. The student should be able to match terms and definitions and describe the structures of the urinary system. He should be able to select normal and abnormal constituents of urine and discuss the maintenance of the urinary system. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the urinary system to the correct definition.
2. List the four excretory systems and their waste products.
3. Identify the structures of the urinary system on a diagram.
4. Describe the location and structure of the kidneys.
5. Describe the three principal parts of the kidney.
6. Identify the parts of a nephron on a diagram.
7. Name the three main functions of the kidneys.
8. Describe the structure and function of the ureters.
9. Describe the location, structure, and function of the bladder.
10. Describe the structures of the male and female urethra, giving the function of the urethra.
11. List three terms that mean "expelling urine."
12. Select the normal and abnormal constituents of urine from a list.
13. Match the normal values to the characteristics of urine.
14. List four ways to maintain a healthy urinary system.

THE URINARY SYSTEM
UNIT XII

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information and assignment sheets.

  F. Provide model or diagram for use in assignment sheet.

  G. If possible, secure an animal kidney. Dissect it and discuss the structure with the class.

  H. Provide materials for collecting and testing the urine specimens.

  I. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Complete assignment sheet.

  D. Collect a urine specimen. Using a urinometer, measure the specific gravity. Using Ames Multistix, test for pH, albumin, sugar, acetone, occult blood, bilirubin, and urobilinogen.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

C. Transparency masters

1. TM 1--The Urinary System With Blood Vessels
2. TM 2--Vertical Section Through a Kidney
3. TM 3--A Simplified Nephron

D. Assignment Sheet #1--Identifying Structures and Functions

E. Test

F. Answers to test

II. References:

A. Memmler, Ruth L. and Ruth B. Rada. *The Human Body in Health and Disease.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

B. Thompson, Ella M. and Caroline Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Additional materials:

A. Films

1. "Exploring the Body: Kidneys." State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1515 West Sixth Avenue, Stillwater, Oklahoma 74074.
2. "Human Body--Excretory System." Coronet Films.

B. Filmstrip--"The Urinary System." Robert J. Brady Company.

THE URINARY SYSTEM
UNIT XII

INFORMATION SHEET

I. Terms and definitions

   A. Nephrology--Study of the kidney

      (NOTE: *Nephro-* means kidney.)

   B. Excretion--Removing useless substances (waste products of cell metabolism) from the blood and lymph

   C. Secretion--Process of giving off a specific product as a result of the activity of a gland

   D. Elimination--Discharge of indigestible materials and waste products of metabolism from the body

   E. Hepatic--Pertaining to the liver

   F. Adrenal--Near the kidney

   G. Renal--Pertaining to the kidney

   H. Ureter--Tube which carries urine from the kidney to the bladder

   I. Urethra--Tube for carrying urine from the bladder to the outside of the body

   J. Urinary meatus--External opening of the urethra

   K. Vascular--Pertaining to or composed of blood vessels

   L. Hilum--Depression or recess at exit or entrance of a duct, nerve, or vessel into a gland

   M. Nephron--Basic functional unit of the kidneys

   N. Urology--Study of the urinary system

II. Excretory systems and their waste products

   A. The skin or integumentary system--Perspiration composed of water, salts, and small quantities of nitrogenous wastes

INFORMATION SHEET

B. The respiratory system Vapor composed of water, carbon dioxide, and other gases

C. The digestive system--Feces or fecal material composed of water, bile, some salts, undigested foods, mucus, and bacteria

D. The urinary system--Urine composed of water, salts, and waste products containing nitrogen

III. Structures of the urinary system with blood vessel supply (Transparency 1)

A. Inferior vena cava

B. Abdominal aorta

C. Adrenal gland

D. Kidney

E. Renal artery

F. Renal vein

G. Ureter

H. Urinary bladder

I. Prostate gland

(NOTE: This gland is found only in the male.)

J. Urethra

IV. Location and structure of the kidneys

A. Lie against the muscles of the back up under the dome of the diaphragm, protected somewhat by the ribs and their cartilages, and behind the peritoneum (retroperitoneal)

B. Reddish-brown, bean-shaped vascular organs embedded in fatty tissue surrounded by a fibrous tissue called renal fascia

C. On the medial surface is the hilum where the blood vessels and nerves enter the kidney and the ureter leaves the kidney

V. Principal parts of the kidney (Transparency 2)

A. Cortex--The smooth, solid portion of the kidney where the greater part of the nephron is located

INFORMATION SHEET

B. Medulla--The inner portion of the kidney where the nephron tubes come together in the collecting tubules

C. Renal basin or pelvis--The area where the upper ureter expands to form a basin which receives the urine from the collecting tubules

VI. A nephron (Transparency 3)

A. Glomerulus--Cluster of capillaries

(NOTE: Blood from the renal arteries flows slowly through the glomerulus.)

B. Bowman's capsule--Funnel-shaped structure partially enclosing the glomerulus

(NOTE: Waste, water, glucose, and salts filter through the thin capillary walls of the glomerulus into the Bowman's capsule.)

C. Convoluted tubule--Long, twisted tube

(NOTE: Most of the water and salts and all the glucose passing through the convoluted tubule are gradually reabsorbed into the bloodstream. Normally there is no glucose in urine ready to be excreted.)

D. Collecting tubule--Collects urine from several convoluted tubules

(NOTE: Remaining mixture of waste products and water, now called urine, drains into the collecting tubule.)

E. Calyx--Bell-shaped cup in the renal pelvis (plural--calices)

(NOTE: Many collecting tubules join in the renal pyramids to form calices.)

F. Cortex--Smooth, solid portion of the kidney

(NOTE: The greater portion of individual nephrons is located in the cortex.)

G. Medulla--Consists of twelve pyramids

(NOTE: Pyramids are composed of the tiny collecting tubules which give the medulla a striped appearance.)

H. Blood vessels

(NOTE: Blood from the renal arteries is filtered as it passes through the glomeruli. After absorbing water and other useful products from convoluted tubules, it empties into the renal veins and passes on to the inferior vena cava.)

INFORMATION SHEET

VII. Main functions of the kidneys

- A. Excretion of waste products
- B. Assistance in maintaining the water balance of the body
- C. Assistance in regulating the acid-base balance of the body

VIII. Structure and function of the ureters

- A. Narrow tubes about 0.5 cm in diameter, 25 to 30 cm in length, attached to the kidney at the renal pelvis and emptying into the urinary bladder
- B. Urine is moved along from kidneys to bladder by rhythmic contractions of the muscle wall similar to peristalsis in the digestive system

IX. Location, structure, and function of the bladder

- A. Location--When empty, the bladder lies below the peritoneum and behind the pubic joint; when full, it may extend upward into the abdominal cavity
- B. Structure
    1. Composed of many layers--An inner mucous membrane lining, muscle layers, connective tissue, and partially covered with peritoneum
    2. When empty, the bladder wall is thick and folded; as it fills, the folds stretch out and the wall becomes thinner
    3. Capacity of normal adult bladder is 300 to 450 cc of urine
    4. Bladder wall has three openings, one from each ureter and one into the urethra
- C. Function--Receives and holds urine

X. Structure and function of the urethra

- A. Male
    1. Part of both the reproductive and urinary systems
    2. Approximately 20 cm long in the adult
    3. Passes through the prostate gland, where two ducts from the male reproductive glands join it, and then through the penis to the outside

INFORMATION SHEET

B. Female

1. Thin-walled, relatively short tube about 4 cm long

2. Embedded in the anterior muscle wall of the vagina

(NOTE: In both male and female, the meatus is controlled by a voluntary sphincter.)

C. Function--Carries urine to the outside of the body

XI. Terms that mean "expelling urine"

A. Voiding

B. Urination

C. Micturition

XII. Urine

A. Normal constituents

1. Water (95 percent)

2. Protein waste products such as urea, uric acid, creatinine

(NOTE: When kidney function is impaired, waste products may accumulate in the blood. This is called uremia.)

3. Mineral salts including sodium chloride, sulfates, and phosphate

4. Yellow pigment from certain bile compounds

5. Toxins

6. Hormones

B. Abnormal constituents

1. Glucose (glycosuria)

2. Albumin (albuminuria)

3. Blood (hematuria)

INFORMATION SHEET

4. Pus cells (pyuria)
5. Acetone (acetonuria)
6. Casts

XIII. Characteristics of urine

A. Total volume in 24 hours--1500 cc (approximately)

B. Color--Straw

C. Appearance--Clear

D. Odor--Mild, aromatic

(NOTE: After standing, it begins to smell of ammonia.)

E. Reaction (pH)--6.0 (slightly acid)

F. Specific gravity--1.015 to 1.025

(NOTE: This is a little heavier than water.)

XIV. Maintenance of a healthy urinary system

A. Adequate diet including basic four food groups daily

B. Intake of sufficient water daily for optimum function

(NOTE: Average adult requires six to eight glasses of water daily.)

C. Avoidance of drugs or other substances that may damage kidneys

D. Cleanliness to avoid urinary tract infections in self and others

1. Wash hands thoroughly before preparing or handling foods or materials to be given by intravenous or intramuscular injections
2. Wash hands thoroughly after using the toilet
3. Bathing as necessary for body cleanliness

   (NOTE: The urethral meatus in the female is exposed to vaginal, uterine, and rectal discharges throughout life, subjecting the delicate urethral structures to irritation and bacterial invasion.)

4. Following use of toilet, females should cleanse from front to back

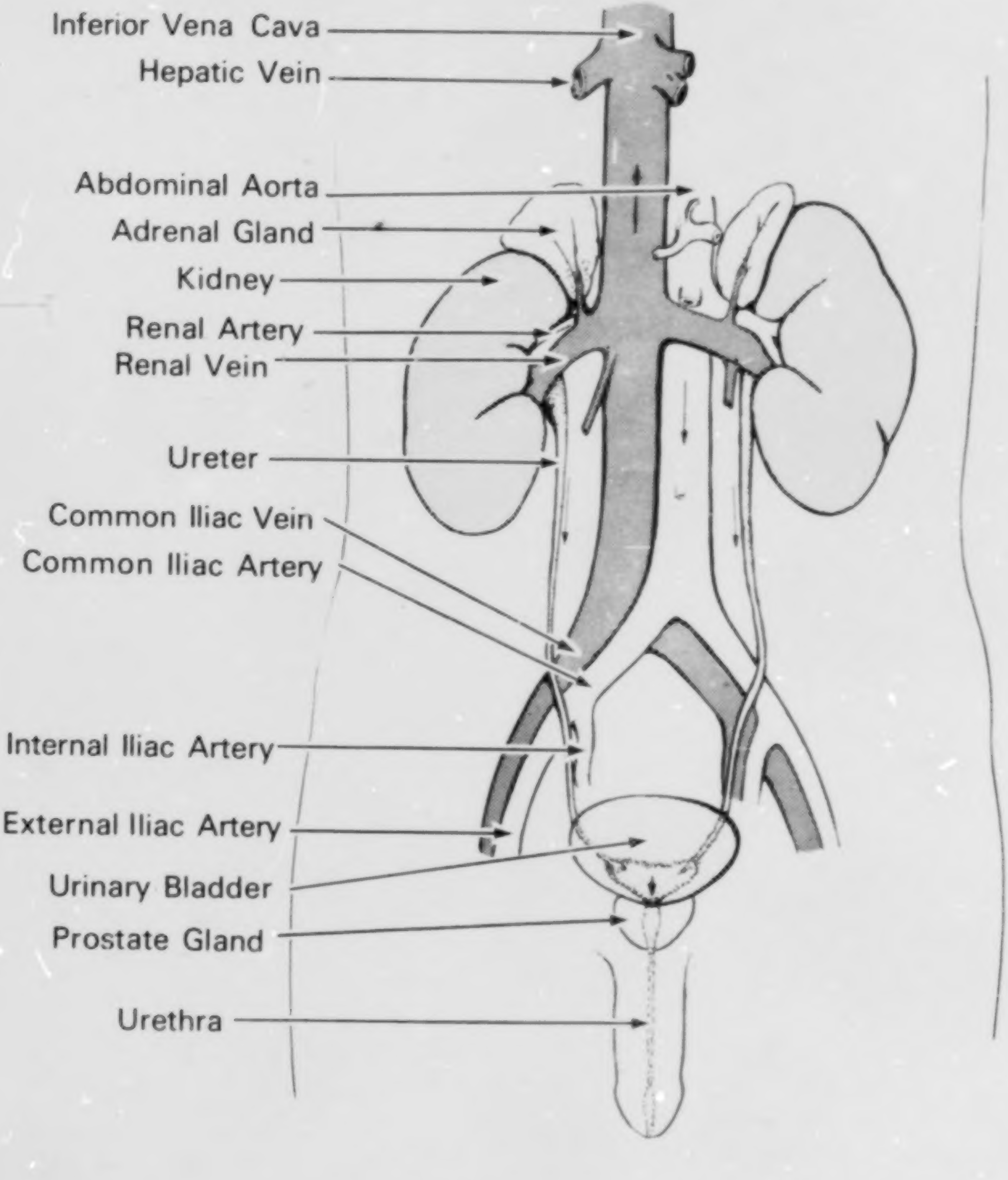
INFORMATION SHEET

E. Prompt medical treatment of urinary tract infection

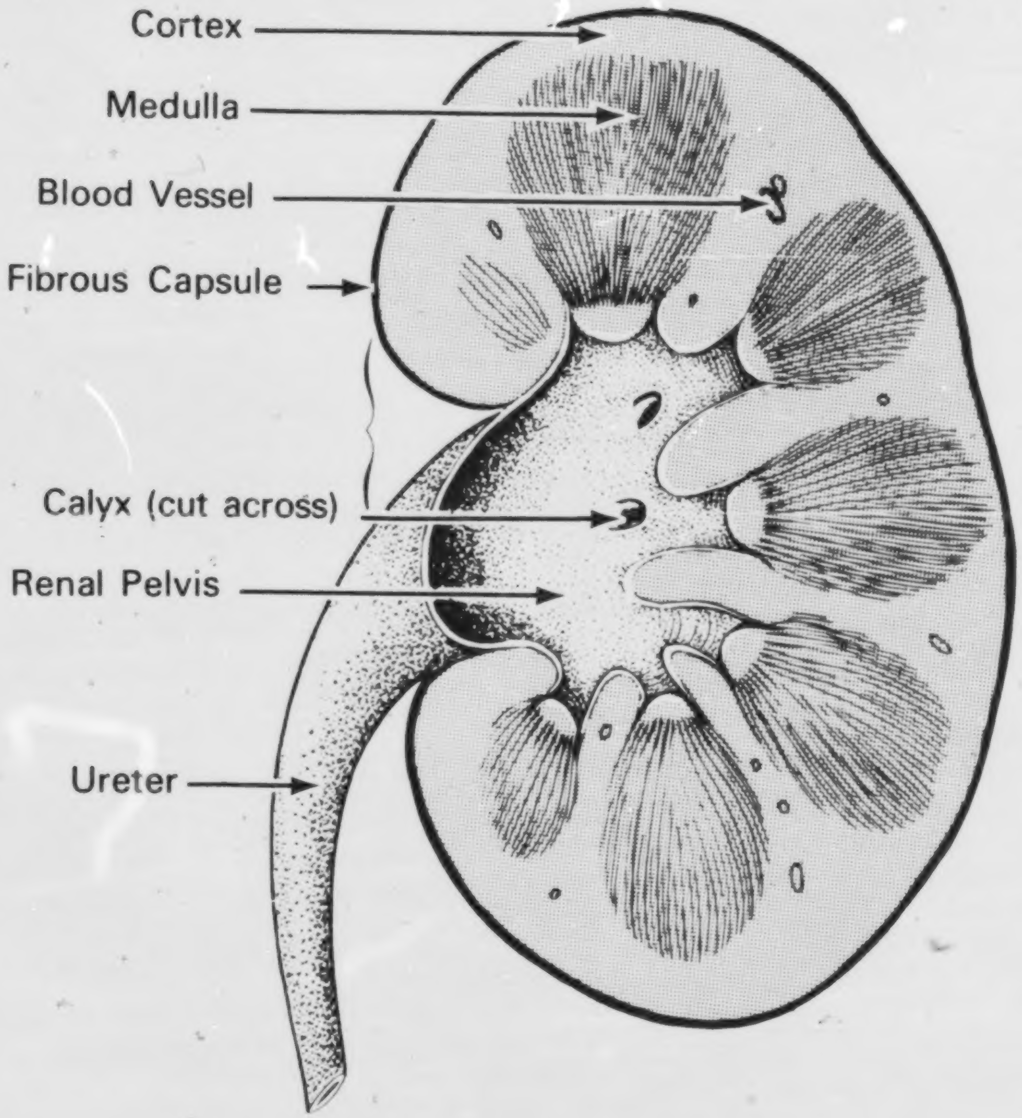
F. Proper care and handling of foods

(NOTE: Several of the bacteria which cause gastrointestinal infections may also cause infections of the genitourinary tract.)

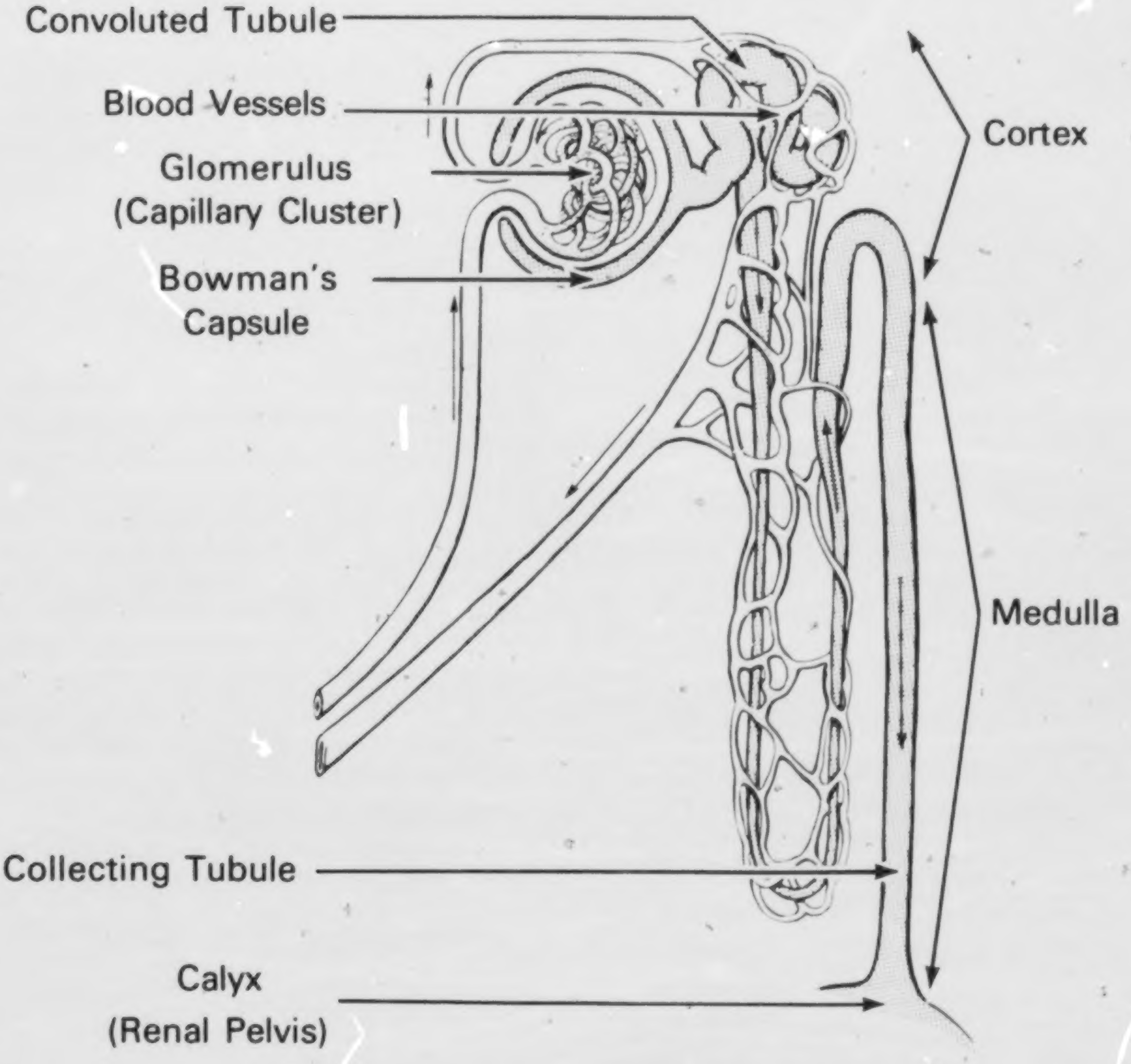
The Urinary System with Blood Vessels


Inferior Vena Cava
Hepatic Vein
Abdominal Aorta
Adrenal Gland
Kidney
Renal Artery
Renal Vein
Ureter
Common Iliac Vein
Common Iliac Artery
Internal Iliac Artery
External Iliac Artery
Urinary Bladder
Prostate Gland
Urethra

Vertical Section Through A Kidney


Cortex
Medulla
Blood Vessel
Fibrous Capsule
Calyx (cut across)
Renal Pelvis
Ureter

A Simplified Nephron


Convoluted Tubule
Blood Vessels
Glomerulus (Capillary Cluster)
Bowman's Capsule
Cortex
Medulla
Collecting Tubule
Calyx (Renal Pelvis)

THE URINARY SYSTEM
UNIT XII

ASSIGNMENT SHEET #1--IDENTIFYING STRUCTURES AND FUNCTIONS

1. On a model or diagram, identify the structures of the urinary system.
2. Using a diagram, trace the processes of blood filtering and urine excretion.

THE URINARY SYSTEM
UNIT XII

TEST

1. Match the terms on the right to the correct definition.

_____a. Removing useless substances from the blood and lymph

_____b. Study of the urinary system

_____c. Process of giving off a specific product as a result of the activity of a gland

_____d. Basic functional unit of the kidneys

_____e. Discharge of indigestible materials and waste products of metabolism from the body

_____f. Depression or recess at exit or entrance of a duct, nerve, or vessel into a gland

_____g. Pertaining to the liver

_____h. Pertaining to or composed of blood vessels

_____i. Near the kidney

_____j. External opening of the urethra

_____k. Pertaining to the kidney

_____l. Tube for carrying urine from the bladder to the outside of the body

_____m. Tube which carries urine from the kidney to the bladder

_____n. Study of the kidney

1. Ureter
2. Urinary meatus
3. Nephrology
4. Renal
5. Secretion
6. Excretion
7. Elimination
8. Hepatic
9. Adrenal
10. Urethra
11. Vascular
12. Hilum
13. Urology
14. Nephron

2. List the four excretory systems and their waste products.

   a.

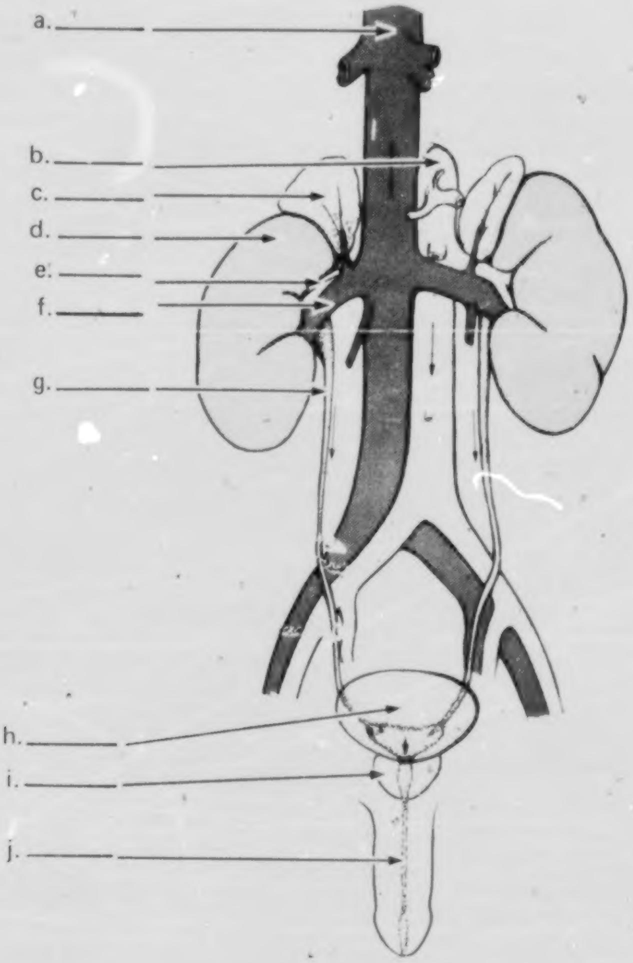
   b.

   c.

   d.

3. Identify the following structures of the urinary system by placing the correct number in the blanks.

   1) Urinary bladder
   2) Kidney
   3) Prostate gland
   4) Inferior vena cava
   5) Urethra
   6) Renal vein
   7) Abdominal aorta
   8) Adrenal gland
   9) Ureter
   10) Renal artery



4. Describe the location and structure of the kidneys.

5. Describe the three principal parts of the kidney.

   a. Medulla

   b. Renal basin or pelvis

   c. Cortex

6. Identify the parts of a nephron by writing the correct number in the blanks.

   1) Collecting tubule

   2) Glomerulus (capillary cluster)

   3) Convoluted tubule

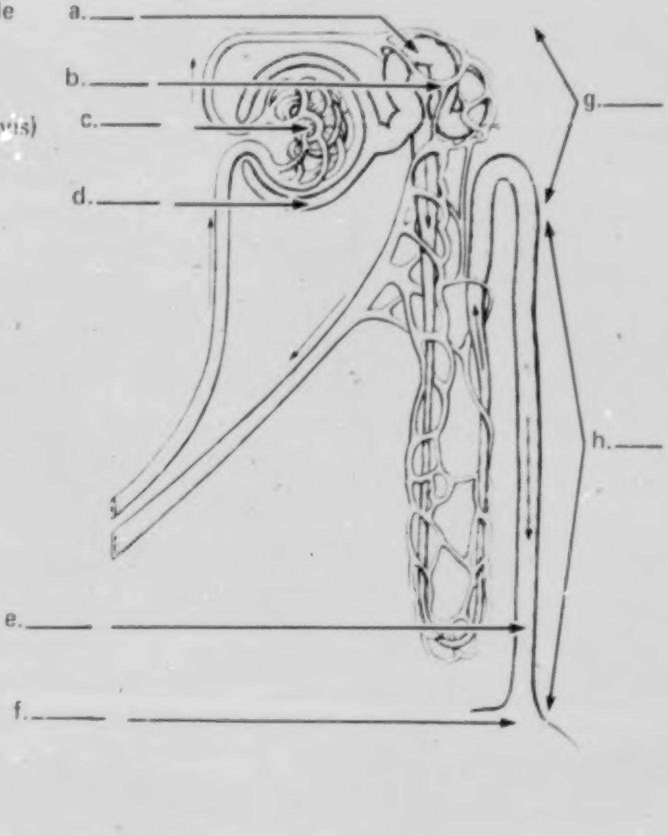
   4) Medulla

   5) Bowman's capsule

   6) Blood vessels

   7) Calyx (renal pelvis)

   8) Cortex



7. Name the three main functions of the kidneys.

   a.

   b.

   c.

8. Describe the structure and function of the ureters.

9. Describe the location, structure, and function of the bladder.

   a. Location

   b. Structure

   c. Function

10. Describe the structures of the male and female urethra giving the function of the urethra.

   a. Male

   b. Female

   c. Function

11. List three terms that mean "expelling urine."

   a.

   b.

   c.

12. Select the normal and abnormal constituents of urine by placing an "A" to the left of the abnormal and a "N" to the left of the normal constituents.

______a. Mineral salts

______b. Blood

______c. Toxins

______d. Hormones

______e. Pus cells

______f. Water

______g. Yellow pigment

______h. Casts

______i. Acetone

______j. Glucose

______k. Protein waste products

______l. Albumin

13. Match the normal values on the right to the correct characteristics of urine.

______a. Color	1.	Clear
______b. Odor	2.	6.0
______c. Specific gravity	3.	1.015 to 1.025
______d. Reaction	4.	Straw
______e. Appearance	5.	1500 cc
______f. Total volume in 24 hours	6.	Mild, aromatic

14. List four ways to maintain a healthy urinary system.

THE URINARY SYSTEM
UNIT XII

ANSWERS TO TEST

1. a. 6
   b. 13
   c. 5
   d. 14
   e. 7
   f. 12
   g. 8
   h. 11
   i. 9
   j. 2
   k. 4
   l. 10
   m. 1
   n. 3

2. a. The skin or integumentary system--Perspiration composed of water, salts, and small quantities of nitrogenous wastes
   b. The respiratory system--Vapor composed of water, carbon dioxide, and other gases
   c. The digestive system--Feces or fecal material composed of water, bile, some salts, undigested foods, mucus, and bacteria
   d. The urinary system--Urine composed of water, salts, and waste products containing nitrogen

3. a. 4
   b. 7
   c. 8
   d. 2
   e. 10
   f. 6
   g. 9
   h. 1
   i. 3
   j. 5

4. Description should include:

   a. Lie against the muscles of the back up under the dome of the diaphragm, protected somewhat by the ribs and their cartilages, and behind the peritoneum (retroperitoneal)

   b. Reddish-brown, bean-shaped vascular organs embedded in fatty tissue surrounded by a fibrous tissue called renal fascia

   c. On the medial surface is the hilum where the blood vessels and nerves enter the kidney and the ureter leaves the kidney

5. Description should include:

   a. The inner portion of the kidney where the nephron tubes come together in the collecting tubules

   b. The area where the upper ureter expands to form a basin which receives the urine from the collecting tubules

   c. The smooth, solid portion of the kidney where the greater part of the nephron is located

6. a. 3 e. 1

   b. 6 f. 7

   c. 2 g. 8

   d. 5 h. 4

7. a. Excretion of waste products

   b. Assistance in maintaining the water balance of the body

   c. Assistance in regulating the acid-base balance of the body

8. Description should include:

   a. Narrow tubes about 0.5 cm in diameter, 25 to 30 cm in length, attached to the kidney at the renal pelvis and emptying into the urinary bladder

   b. Urine is moved along from kidneys to bladder by rhythmic contractions of the muscle wall similar to peristalsis in the digestive system

9. Description should include:

   a. Location–When empty, the bladder lies below the peritoneum and behind the pubic joint; when full, it may extend upward into the abdominal cavity

b. Structure

   1) Composed of many layers--An inner mucous membrane lining, muscle layers, connective tissue, and partially covered with peritoneum

   2) When empty, the bladder wall is thick and folded; as it fills, the folds stretch out and the wall becomes thinner

   3) Capacity of normal adult bladder is 300 to 450 cc of urine

   4) Bladder wall has three openings, one from each ureter and one into the urethra

c. Function--Receives and holds urine

10. Description should include:

a. Male

   1) Part of both the reproductive and urinary systems

   2) Approximately 20 cm long in the adult

   3) Passes through the prostate gland, where two ducts from the male reproductive glands join it, and then through the penis to the outside

b. Female

   1) Thin-walled, relatively short tube about 4 cm long

   2) Embedded in the anterior muscle wall of the vagina

c. Function--Carries urine to the outside of the body

11. a. Voiding

b. Urination

c. Micturition

12. a. N

b. A

c. N

d. N

e. A

f. N

g. N

h. A

i. A

j. A

k. N

l. A

13. a. 4
    b. 6
    c. 3
    d. 2
    e. 1
    f. 5

14. Any four of the following
    a. Adequate diet including basic four food groups daily
    b. Intake of sufficient water daily for optimum function
    c. Avoidance of drugs or other substances that may damage kidneys
    d. Cleanliness to avoid urinary tract infections in self and others
        1) Wash hands thoroughly before preparing or handling foods or materials to be given by intravenous or intramuscular injections
        2) Wash hands thoroughly after using the toilet
        3) Bathing as necessary for body cleanliness
        4) Following use of toilet, females should cleanse from front to back
    e. Prompt medical treatment of urinary tract infection
    f. Proper care and handling of foods

THE NERVOUS SYSTEM
UNIT XIII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe the structures and functions of the nervous system and its various parts. The student should be able to match terms and definitions and identify the parts of the nervous system. This knowlege will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the nervous system to the correct definition.
2. List four functions of the nervous system.
3. List the three subdivisions of the nervous system and their components.
4. Name the three parts of a neuron giving one function of each.
5. Describe three types of neurons.
6. Describe the structure of an axon including the names of the layers and the difference between white and gray matter.
7. Discuss the regeneration of peripheral nerves.
8. Describe the transmission of nerve signals giving an example.
9. Identify the main parts of the central nervous system on a diagram.
10. Name the function of each of the three areas of the cerebral cortex.
11. Match the parts of the brain with their function.
12. Describe the spinal cord.
13. List two functions of the spinal cord.
14. Describe the protection of the central nervous system.
15. Discuss blood supply to the brain.
16. Discuss the formation, purpose, and absorption of cerebrospinal fluid.
17. List the number and four general functions of cranial nerves.

18. Match the name and number of the cranial nerves to the correct function.
19. List the names of the spinal nerves and the number of pairs of each.
20. Describe a reflex arc giving one example.
21. Name the function and divisions of the autonomic nervous system.
22. List eight ways to maintain the nervous system.
23. Demonstrate the ability to:
    a. Test reflexes.
    b. Identify the parts of a brain.
    c. Test cranial nerves.

THE NERVOUS SYSTEM
UNIT XIII

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information, job, and assignment sheets.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information and assignment sheets.

  F. Obtain materials and equipment needed for use with job sheets. If animal brain is not easily obtained, Assignment Sheet #1 may be completed instead. Use of both Job Sheet #2 and/or Assignment Sheet #1 is optional.

  G. Demonstrate and discuss procedures outlined in the job sheets.

  H. Direct students through the different learning paths for each specific objective.

  I. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Complete assignment sheet.

  D. Demonstrate the ability to accomplish the procedures outlined in the job sheets.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

C. Transparency masters

    1. TM 1--A Typical Neuron
    2. TM 2--A Synapse
    3. TM 3--Human Nervous System
    4. TM 4--Sensory, Central, and Motor Neurons
    5. TM 5--Regeneration of a Nerve Fiber
    6. TM 6--Sagittal Section of the Brain
    7. TM 7--External Surface of the Brain
    8. TM 8--Functional Areas of the Brain
    9. TM 9--Reflex Arc
    10. TM 10--Coronal Section of Top of Head
    11. TM 11--The Cranial Nerves
    12. TM 12--The Dermatomes

D. Assignment Sheet #1--The Brain

E. Answers to assignment sheet

F. Job Sheets

    1. Job Sheet #1--Test Reflexes
    2. Job Sheet #2--Identify the Parts of a Brain
    3. Job Sheet #3--Test Cranial Nerves

G. Test

H. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Haymaker, Webb and Barnes Woodhall. *Peripheral Nerve Injuries.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1945.

C. Memmler, Ruth and Ruth Rada. *The Human Body in Health and Disease.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1970.

D. Reith, Edward J., Bertha Breidenback, and Mary Lorenc. *Textbook of Anatomy and Physiology.* New York: McGraw Hill Book Company, 1964.

E. Thomas, Virginia. *Life Sciences for Health Technologies.* Los Angeles, California: Technicourse, Inc., 1970.

F. von Gremp, Zella and Lucile Broadwell. *Practical Nursing Study Guide and Review.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1965.

III. Additional materials:

A. Films

1. "Human Body: The Nervous System." Oklahoma State Department of Health.

2. "Fundamentals of the Nervous System." Encyclopedia Britannica.

3. "Gateways to the Mind." Bell Telephone System.

(NOTE: Contact local telephone business office.)

4. "Prevention of Disability from a Stroke." Oklahoma State Department of Health.

B. Filmstrips

1. "The Nervous System." Robert J. Brady Company.

2. "The Nervous System and the Cardiovascular System." Trainex Corporation.

THE NERVOUS SYSTEM
UNIT XIII

INFORMATION SHEET

I. Terms and definitions

  A. Neurology--Study of the nervous system

  B. Neuron--Basic nerve cell (Transparency 1)

  C. Synapse--Junction of an axon and one or more dendrites (Transparency 2)

  D. Nerve--Bundle of nerve fibers, blood vessels, and connective tissue outside the central nervous system

  E. Nerve tract--Bundle of nerve cells within the central nervous system

  F. Ganglion--Mass of nerve tissue, principally nerve cell bodies, outside the central nervous system

  G. Nerve fibers--Threadlike projections of cytoplasm from the cell body of a neuron; axons and dendrites

  H. Neuroglia--Supporting structure for nerve tissue consisting of blood vessels, connective tissue, and specialized cells

  I. Gray matter--Nonmyelinated nervous tissue; primarily the bodies of nerve cells

  J. White matter--Nervous tissue composed of myelinated nerve fibers

  K. Cerebrospinal fluid--Watery fluid found in the ventricles of the cerebrum and surrounding the spinal cord

  L. Ventricle--One of the small cavities of the brain

  M. Stimulus--Any agent or influence that produces a response or increase in activity in living protoplasm

  N. Regeneration--Repair, regrowth, or restoration of a part

  O. Affector--Group of cells functioning in reception of stimuli; receiving end of sensory nerves

  (NOTE: These are receptor nerves.)

  P. Occipital--Pertaining to the back of the head

  Q. Effector--Nerve endings that carry out actions

  (NOTE: These are motor nerves.)

  R. Cerebral cortex--Outer layer of gray matter of the cerebrum

INFORMATION SHEET

II. Functions of the nervous system

  A. Reception of external impressions and information

  (NOTE: This is external stimuli.)

  B. Coordination of internal messages

  (NOTE: This is internal stimuli.)

  C. Response and readjustment to internal and external stimuli

  D. Storage of information

  (NOTE: This is memory.)

  E. Coordination of all body activities

III. Subdivisions of the nervous system and their components (Transparency 3)

  A. Central nervous system; CNS

    1. Brain

    2. Spinal cord

  B. Peripheral nervous system; PNS

    1. Cranial nerves

    (NOTE: There are twelve pairs.)

    2. Spinal nerves

    (NOTE: There are thirty-one pairs.)

  C. Autonomic nervous system; involuntary nervous system; ANS

    1. Sympathetic division; thoracolumbar

    2. Parasympathetic division; craniosacral

IV. Parts of a typical neuron and their functions (Transparency 1)

  A. Cell body; cyton

    1. Acts as a sending and receiving center

    2. Carries on metabolism

    3. Stores energy

  (NOTE: Cell bodies differ in size according to function.)

INFORMATION SHEET

B. Dendrite--Carries impulses to the cell body

(NOTE: The word dendrite means "tree-like". Dendrites are usually numerous, short, branched processes of the cell body differing in number, size, and length depending upon location and function.)

C. Axon--Conducts impulses away from the cell body

(NOTE: Each neuron has one axon, which may be as long as a meter.)

V. Types of neurons (Transparency 4)

A. Sensory or afferent--Receive messages from all parts of the body and transmit them to the central nervous system

B. Central, connecting, or internuncial--Conduct messages or impulses from sensory to motor nerves

(NOTE: These are found only in the central nervous system.)

C. Motor or efferent--Transmit messages from the central nervous system to all parts of the body

VI. Structure of an axon--Consists of three layers (Transparency 1)

A. Axis cylinder--Central core of jellylike material

B. Myelin sheath--Fatty covering which provides insulation and speeds impulse conduction; nerve fibers covered with myelin are called myelinated; myelin sheath gives white appearance to white matter; in contrast, gray matter is nonmyelinated

C. Neurilemma--Thin membrane with nuclei called Schwann cells completely covering the nerve fiber; its function is regeneration of nerve fibers

VII. Regeneration of peripheral nerves (Transparency 5)

A. Neurons do not multiply as other cells do to replace those destroyed by injury or disease

B. Nerve fiber of the peripheral nervous system can regenerate only if the cell body is intact

C. The part of the fiber separated from the cell body disintegrates

D. Some portion of the fiber attached to the cell body disintegrates

E. At the site of the injury the neurilemma starts to regenerate; if the cut ends of the neurilemma are not too far apart, they grow together to re-establish the neurilemmar tube

INFORMATION SHEET

F. Remaining stump of the axon attached to the cell body is then able to grow in the repaired tube

G. Surgeon is able to aid regeneration of peripheral nerves by aligning the cut ends of a nerve; in some cases the gap of injury can be spanned by artificial tubes

(NOTE: Nerve tissue regenerates slowly, at an approximate rate of 1.5 mm per day, so the nerve injury may persist for a long time.)

H. Nerve fibers of the central nervous system are not covered with neurilemma and therefore are incapable of regeneration when damaged

VIII. Transmission of nerve signals (Transparencies 2 and 4)

A. When a neuron receives a signal, it sends an impulse on to the next neuron across the synapse between axon and dendrite

B. Two or more neurons arranged in a chain function to conduct impulses from one place to another

C. Impulses pass only in one direction from receptor dendrite to cell body to axon to dendrite and so on

D. When a nerve impulse is blocked, the blocking usually takes place at a synapse

E. Example of signal transmission--When the hand touches something hot, the receptors start a message over the afferent neurons to the central nervous system; the connecting neurons of the central nervous system interpret the message and determine the course of action; a further impulse is sent out over the efferent neurons to bring about a proper response, in this instance to remove the hand from the source of heat

IX. Parts of the central nervous system

A. Brain (Transparency 6)

1. Forebrain

a. Cerebrum

b. Thalamus

c. Hypothalamus

2. Midbrain

INFORMATION SHEET

3. Hindbrain

    a. Pons (bridge)

    b. Medulla or medulla oblongata

    c. Cerebellum

B. Spinal cord

X. Functions of the cerebral cortex

A. Motor areas--Control movement of muscles

B. Sensory areas--Receive impulses of heat, cold, touch, pain, pressure, and proprioception from receptors

(NOTE: Proprioception is the awareness of posture, movement, changes in equilibrium, and the knowledge of position, weight and resistance of objects in relation to the body.)

C. Association areas--Concerned with higher mental functions such as learning, memory, reasoning, judgment, conscience, thinking, insight, and emotions

XI. Functions of the brain (Transparencies 7 and 8)

(NOTE: The left side of the brain controls the right side of the body; the right side of the brain controls the left side of the body.)

A. Forebrain

1. Frontal lobe of cerebrum--Controls voluntary muscles and judgement

2. Parietal lobe of cerebrum--Controls sensory functions such as pain, touch, and temperature interpretation

3. Temporal lobe of cerebrum--Controls hearing, smell, and taste

4. Occipital lobe of cerebrum--Controls vision

5. Thalamus--Serves as relay center; monitors sensory stimuli

6. Hypothalamus--Controls body temperature, water balance, sleep, appetite, some emotions such as fear and pleasure, and both divisions of the autonomic nervous system

(NOTE: Thalmus and hypothalamus lie between the hemispheres of the cerebrum.)

INFORMATION SHEET

B. Midbrain--Serves as a reflex center

(NOTE: This is the site of third and fourth cranial nerve nuclei.)

C. Hindrain

1. Pons--Connecting link between the cerebrum and cerebellum

(NOTE: This is the site of fifth, sixth, seventh, and eighth cranial nerves.)

2. Medulla--Controls vital functions such as breathing, heart rate, blood pressure, swallowing, and coughing

(NOTE: This is the site of cranial nerves nine through twelve.)

3. Cerebellum--Maintenance of balance, equilibrium, coordination, and muscle tone

XII. Spinal cord (Transparencies 3 and 9)

A. Oval-shaped bundle of nerves extending from the medulla to the level of the second lumbar vertebra where it begins to taper into a "horse tail" of fibers that finally end in the coccygeal area

(NOTE: The technical name for the "horse tail" is cauda equina. In the embryo the spinal cord occupies the entire spinal canal extending down into the tail portion of the vertebral column. However, the bone tissue grows more rapidly than nerve tissue so by adulthood the cord only reaches to the level of the first or second lumbar vertebra.)

B. Cross section of the spinal cord reveals an inner H-shaped area of gray matter surrounded by white matter

XIII. Functions of the spinal cord

A. Conducts impulses to and from the brain

B. Serves as a reflex center to receive and transmit messages through the nerve fibers

XIV. Protection of the central nervous system (Transparency 10)

A. Nervous tissue is fragile and easily injured; surrounded by fluid, membranes, and bones for protection

B. Cranial bones encase the brain; vertebrae encase the spinal cord

INFORMATION SHEET

C. Meninges, a tough membrane, lines cranial bones and vertebrae with three layers of tissue

1. Dura mater, outer layer--Provides protection

2. Arachnoid membrane--Resembles a cobweb with cerebrospinal fluid filling the space under it

3. Pia mater, inner layer--Thin vascular layer containing blood vessels which bring oxygen and carry away waste products

XV. Blood supply to the brain

A. Four arteries, two internal carotids and two vertebrals, unite to form the circle of Willis at the base of the brain

B. Circular arrangement of the arteries equalizes the circulation of blood and provides an alternate passageway for blood in case of blockage of one of the arteries

C. Approximately fifteen percent of the total output of the heart is needed by the brain for normal function

(NOTE: Either too little oxygen or too much carbon dioxide causes dilatation of the arteries of the brain permitting more blood to reach the brain.)

D. Numerous centers of function in the brain require an adequate supply of oxygen at all times

(NOTE: If the blood supply to the brain is halted for six to ten minutes, irreversible changes take place.)

XVI. Formation, purpose, and absorption of cerebrospinal fluid (Transparency 10)

A. Formation--Produced constantly by filtration from the blood in the capillaries of the brain and in the ventricles

B. Purpose--Cerebrospinal fluid circulates around the brain and spinal cord maintaining an even pressure and acting as a cushion or shock absorber

C. Absorption--Continually absorbed by the blood vessels to maintain constant volume, pressure, and composition

XVII. Cranial nerves (Transparency 11)

A. Twelve pairs of cranial nerves

INFORMATION SHEET

B. Functions

1. Convey special sense impulses such as smell, vision, and hearing
2. Convey general sense impulses such as pain, touch, temperature, deep muscle sense, and pressure and vibration senses
3. Control voluntary muscles
4. Control glands and involuntary muscles

XVIII. Names and specific functions of the cranial nerves

	Name	Number	Function
A.	Olfactory	One	Sense of smell
B.	Optic	Two	Sense of sight
C.	Oculomotor	Three	Controls part of the eyeball muscles
D.	Trochlear	Four	Controls one eyeball muscle
E.	Trigeminal	Five	Three branches supply cornea and conjunctiva; upper portion of face, ear, lower lip, teeth, and gums; and muscles for chewing
F.	Abducens	Six	Controls lateral eye movement
G.	Facial	Seven	Supplies facial muscles, middle ear, taste
H.	Auditory	Eight	Sense of hearing and balance
I.	Glossopharyngeal	Nine	Taste, swallowing
J.	Vagus	Ten	Swallowing, hunger, speech muscles, breathing, heart rate, peristalsis, control of glands in stomach and pancreas
K.	Spinal accessory	Eleven	Controls muscles of neck and upper back
L.	Hypoglossal	Twelve	Controls tongue muscles

INFORMATION SHEET

XIX. Spinal nerves (Transparencies 3 and 12)

(NOTE: There are thirty-one pairs of spinal nerves and they are named according to the segment of spinal cord to which they are attached. Disease or injury that damages a spinal nerve will cause loss of feeling and voluntary movement to the area served by that nerve. A dermatome is an area of skin supplied by a specific spinal nerve.)

	Name	Number of pairs
A.	Cervical	Eight
B.	Thoracic	Twelve
C.	Lumbar	Five
D.	Sacral	Five
E.	Coccygeal	One

XX. Reflex arc

A. Simplest type of nerve response which is unconscious and involuntary

B. Involves an affector, an afferent neuron, a connecting neuron in the spinal cord, an efferent neuron, and an effector (Transparency 9)

C. Examples include kneejerk or patellar, abdominal, achilles, biceps, triceps, and plantar reflexes; blinking of eye when something touches it; or secretion of saliva at sight or smell of food

(NOTE: Reflex tests are used diagnostically to determine defects in the central nervous system.)

XXI. Autonomic nervous system (Transparency 3)

A. Function--Regulates the action of the glands, the smooth muscles of the hollow organs, and the heart automatically without one being consciously aware of them much of the time

B. Divisions

1. Sympathetic; thoracolumbar

(NOTE: This system increases certain automatic functions and can be thought of as an emergency nervous system.)

2. Parasympathetic; craniosacral

(NOTE: This system counteracts the effects of the sympathetic system and under ordinary circumstances it dominates most of automatic functions.)

INFORMATION SHEET

XXII. Maintenance of the nervous system

A. Adequate diet with particular attention to vitamins A, B, C, riboflavin, niacin, and pyridoxine which help maintain healthy nervous tissue; proteins necessary to maintain tissue; and carbohydrates essential for energy

B. Avoidance of excessive use of substances which may adversely affect the nervous system

Examples: Alcohol, carbon monoxide, barbiturates, caffeine, and nicotine

C. Prompt care of infections and injuries to minimize loss of nerve function

D. In cases of nerve damage with loss of function or sensation, extra care is necessary to prevent further tissue damage

E. Genetic counseling for parents who are carriers of inherited disorders of the nervous system

F. Testing of newborn infants for phenylketonuria

(NOTE: Phenylketonuria or PKU is an inherited metabolic disorder which can produce mental retardation unless detected and treated in infants.)

G. Treatment of inherited or congenital defects to the fullest extent possible

H. Adequate sleep to provide rest for the nervous system

I. Injections of medicines given in areas where there is minimum chance of contact with nerves

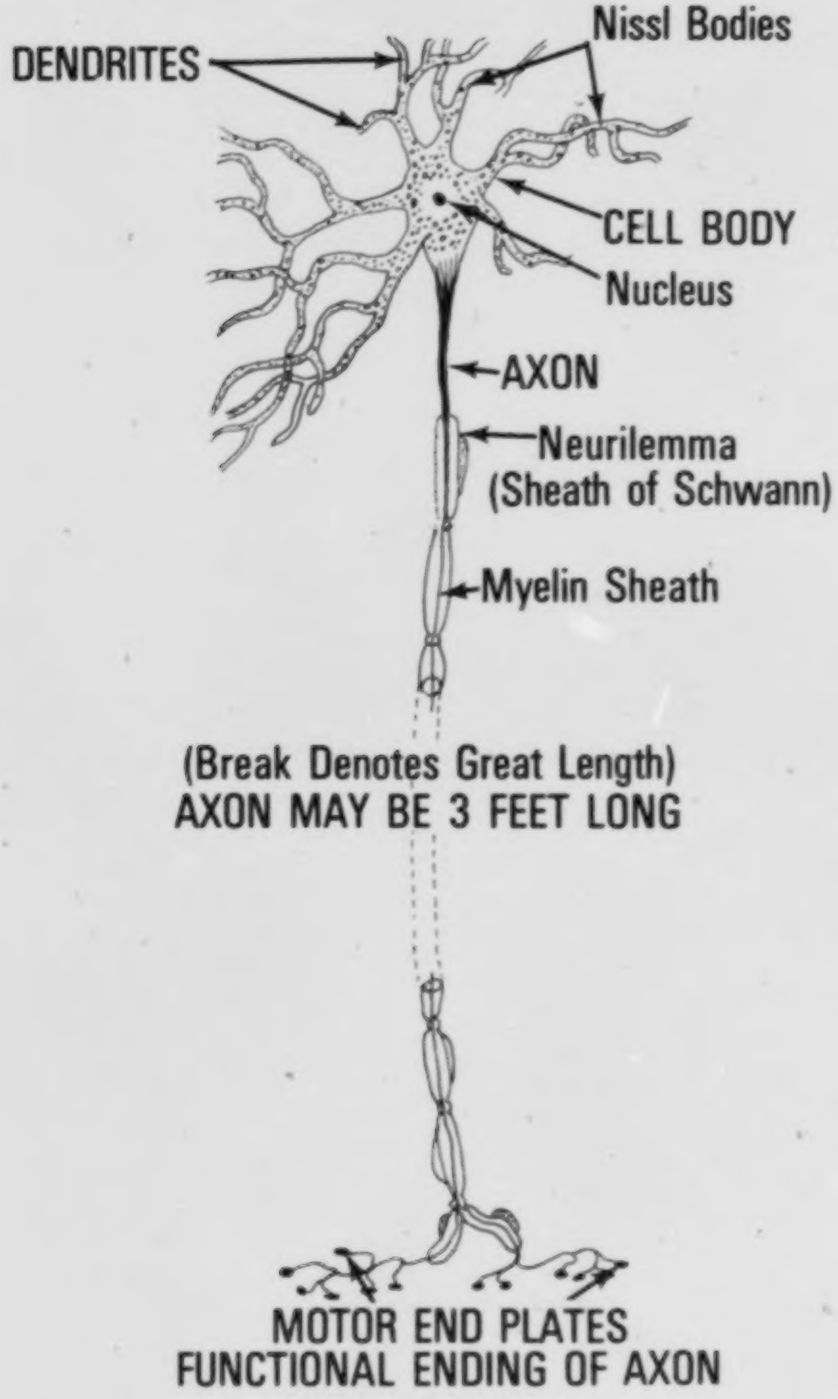
J. Periods of relaxation

K. Periods of productive activity

L. Practice of good mental hygiene

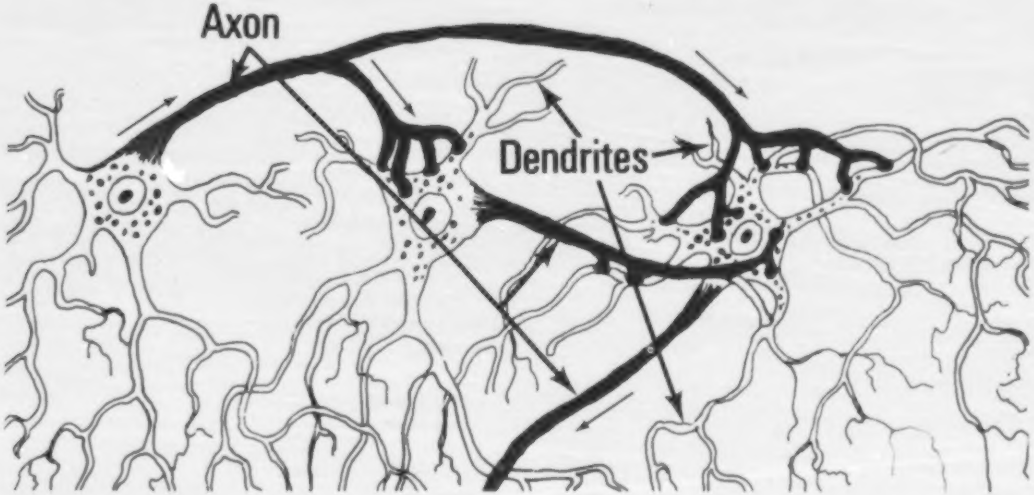
M. Use of drugs only by physician's orders

A Typical Neuron

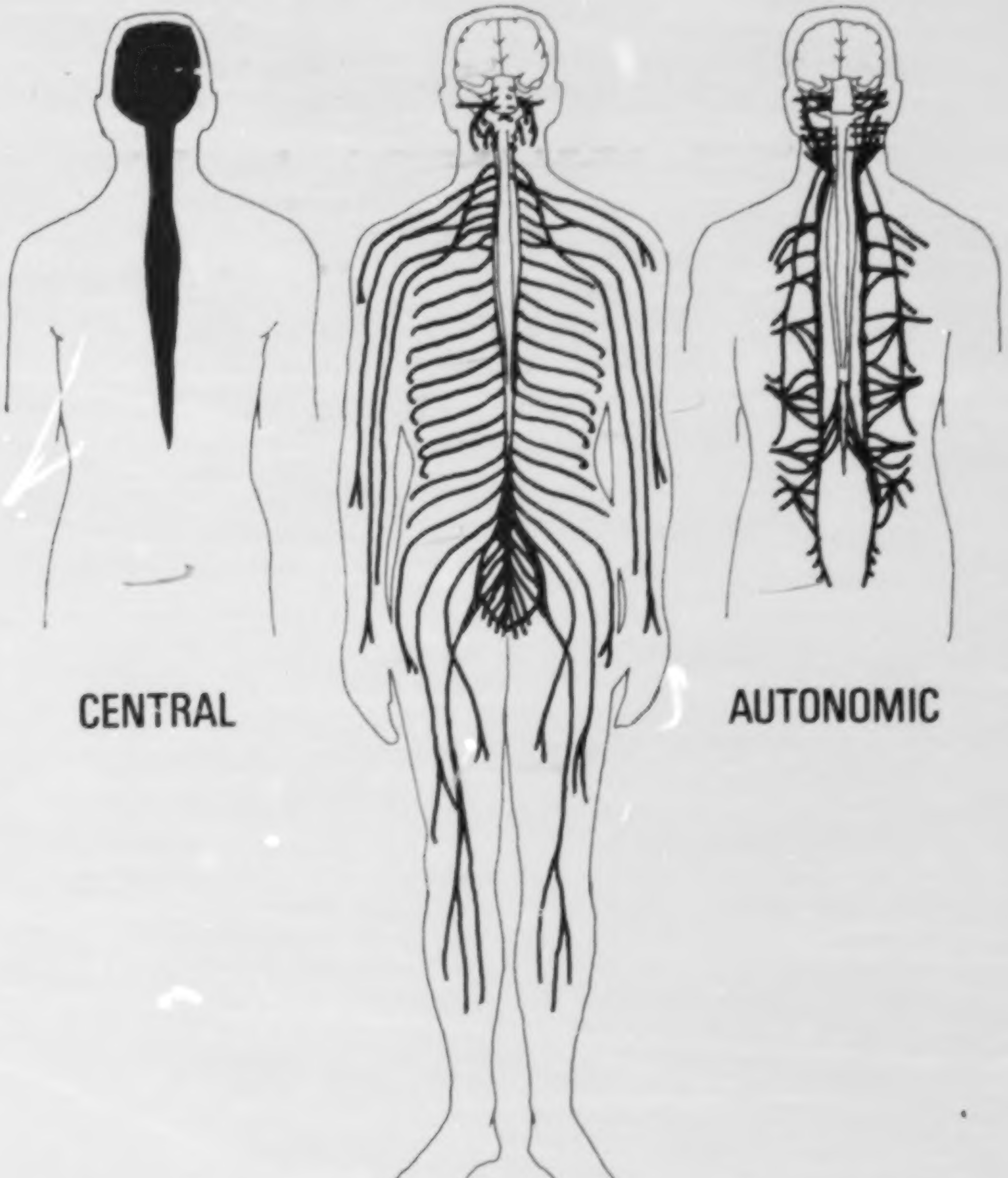

Nissl Bodies
DENDRITES
CELL BODY
Nucleus
AXON
Neurilemma
(Sheath of Schwann)
Myelin Sheath
(Break Denotes Great Length)
AXON MAY BE 3 FEET LONG
MOTOR END PLATES
FUNCTIONAL ENDING OF AXON

A Synapse

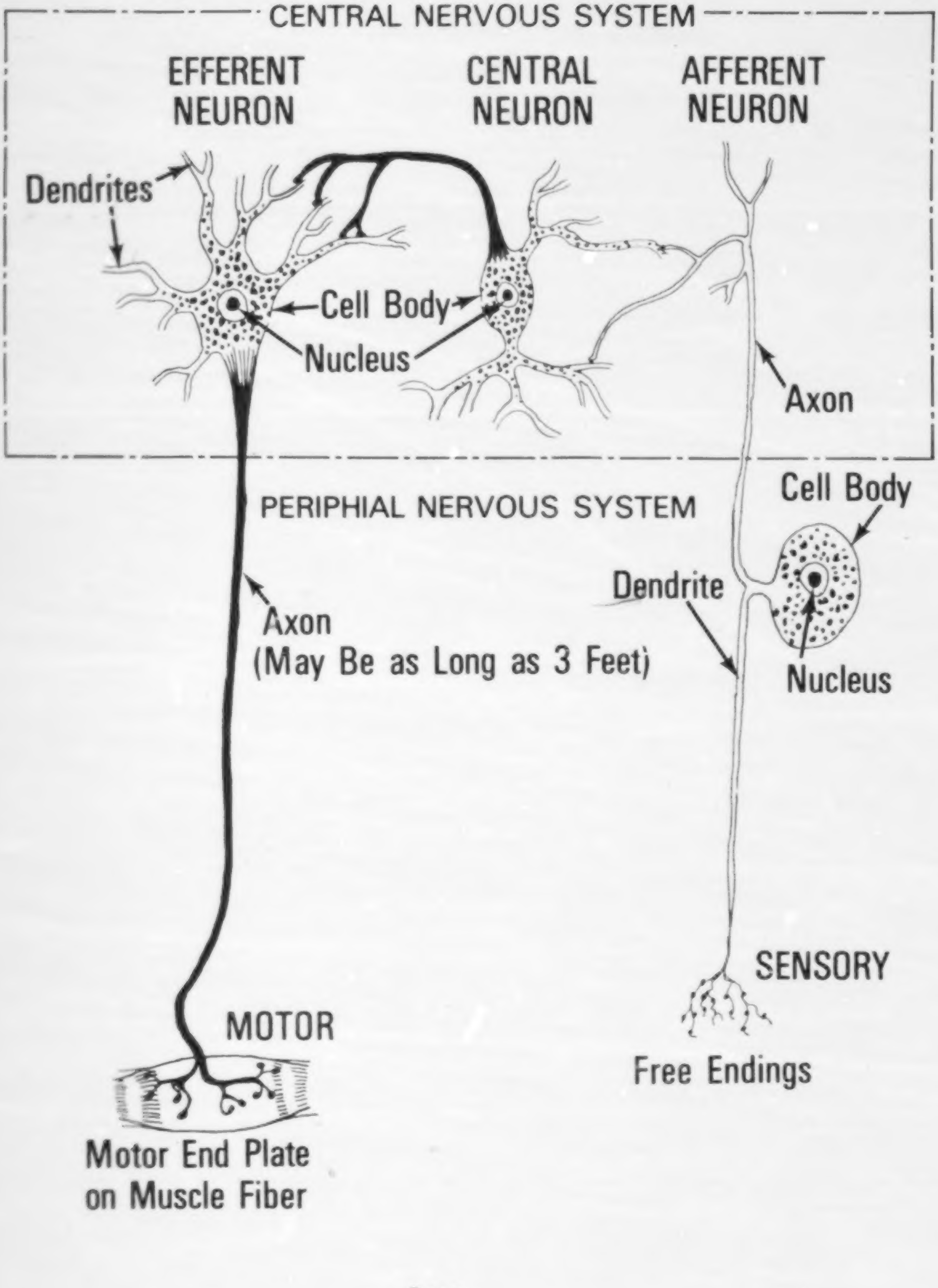
SYNAPSE: Ends of Axons Contact Dendrites or Cell Bodies of Other Cells for Transmission of Impulses


Axon
Dendrites

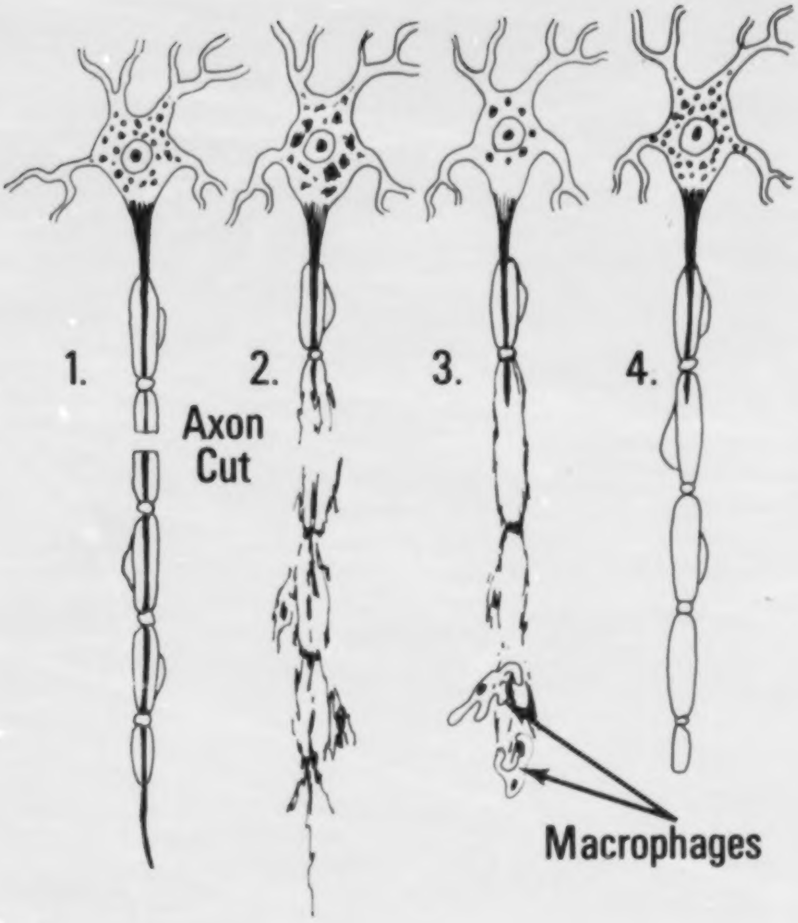
Human Nervous System


CENTRAL
AUTONOMIC
PERIPHERAL

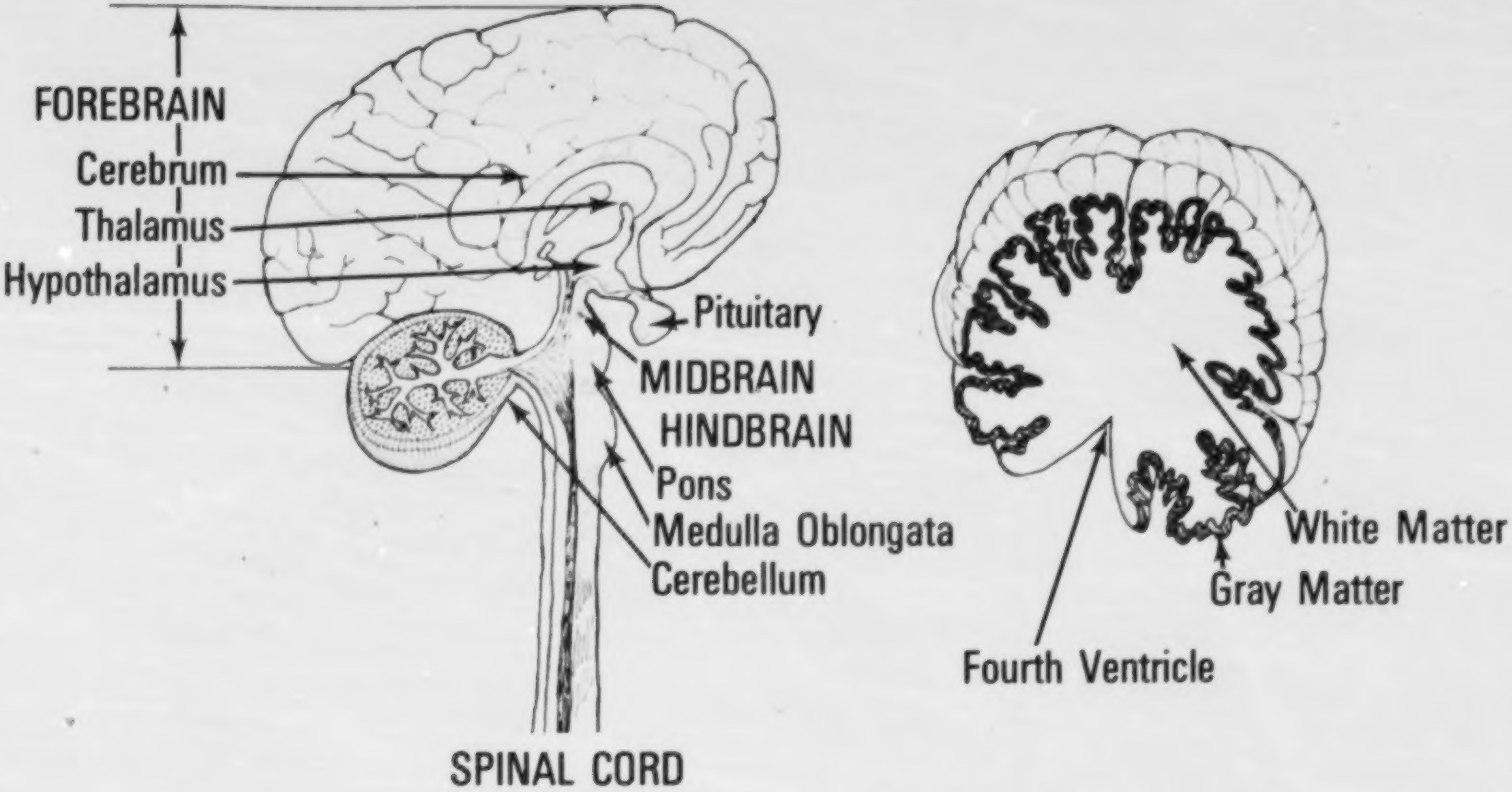
Sensory, Central, and Motor Neurons


CENTRAL NERVOUS SYSTEM
EFFERENT NEURON
CENTRAL NEURON
AFFERENT NEURON
Dendrites
Cell Body
Nucleus
Axon
PERIPHIAL NERVOUS SYSTEM
Cell Body
Dendrite
Nucleus
Axon
(May Be as Long as 3 Feet)
SENSORY
MOTOR
Free Endings
Motor End Plate
on Muscle Fiber

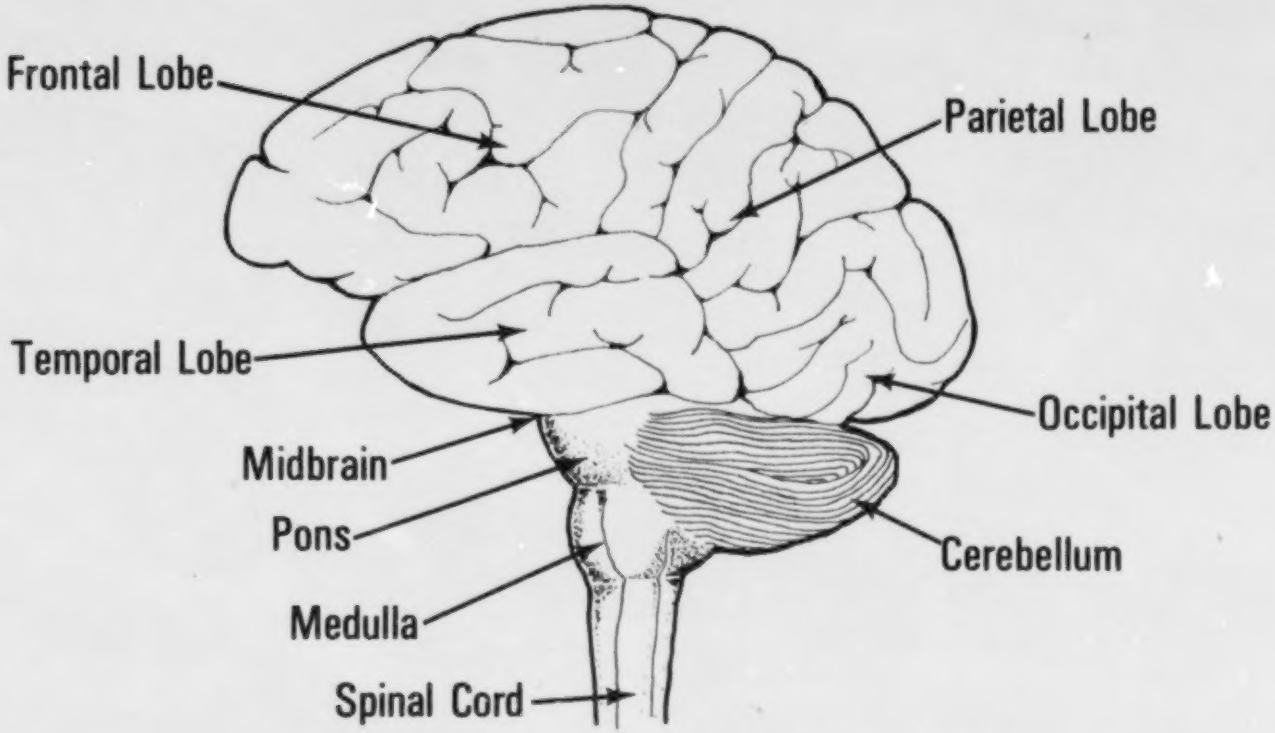
Regeneration of a Nerve Fiber


1.
Axon
Cut
2.
3.
4.
Macrophages

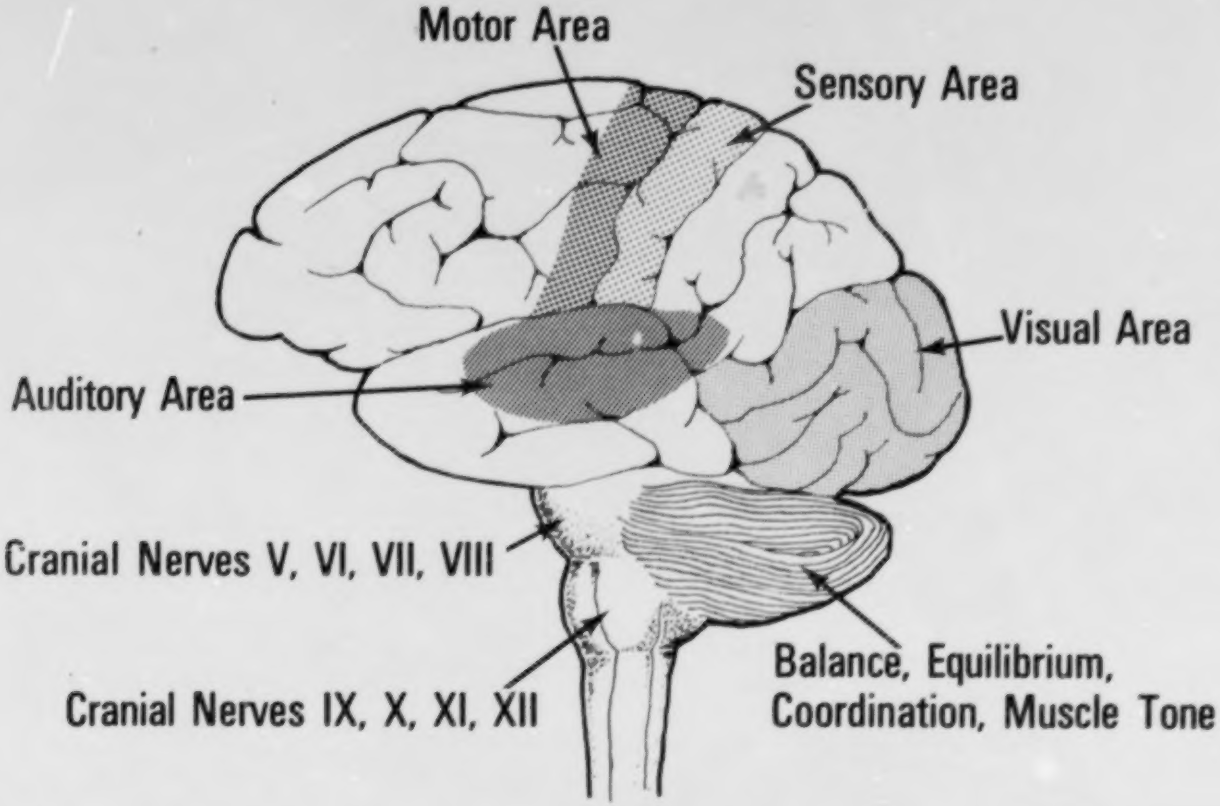
Sagittal Section of Brain


FOREBRAIN
Cerebrum
Thalamus
Hypothalamus
Pituitary
MIDBRAIN
HINDBRAIN
Pons
Medulla Oblongata
Cerebellum
SPINAL CORD
White Matter
Gray Matter
Fourth Ventricle

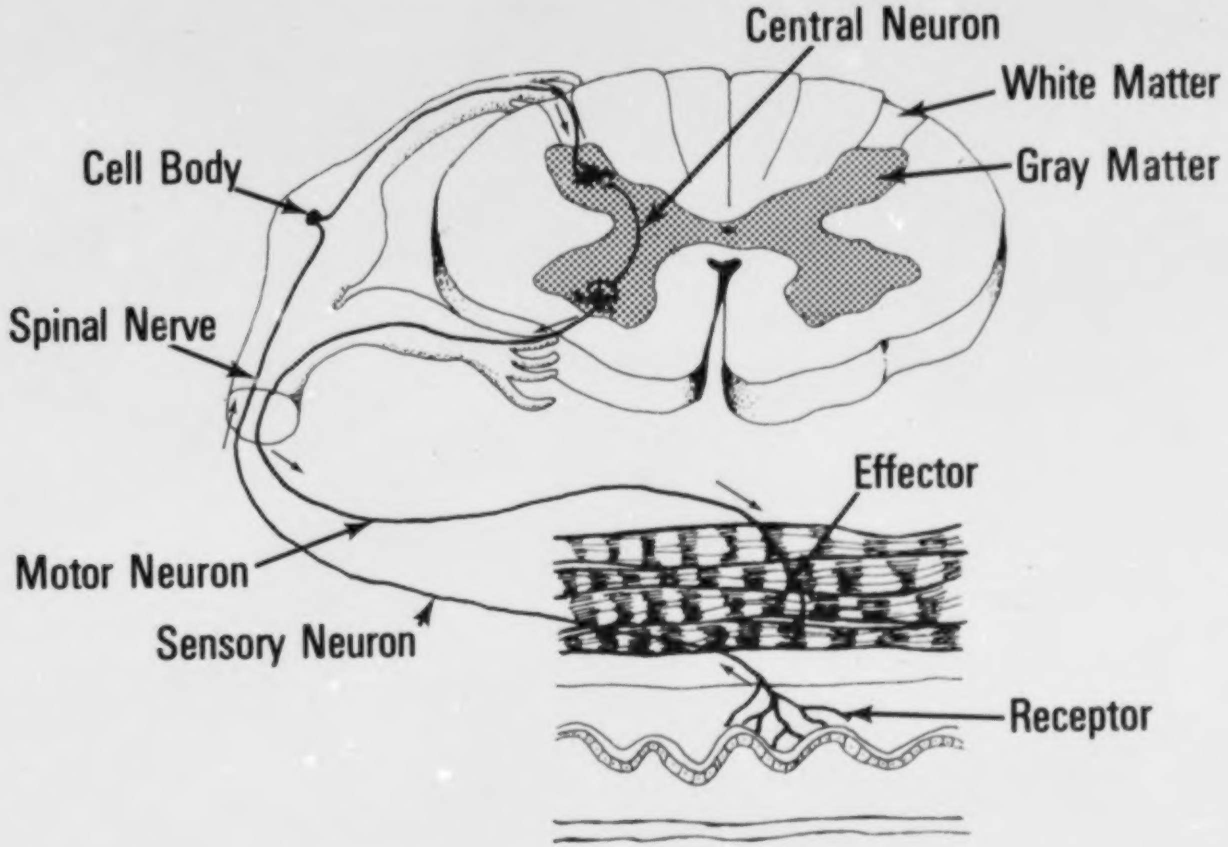
External Surface of the Brain


Frontal Lobe
Parietal Lobe
Temporal Lobe
Occipital Lobe
Midbrain
Pons
Cerebellum
Medulla
Spinal Cord

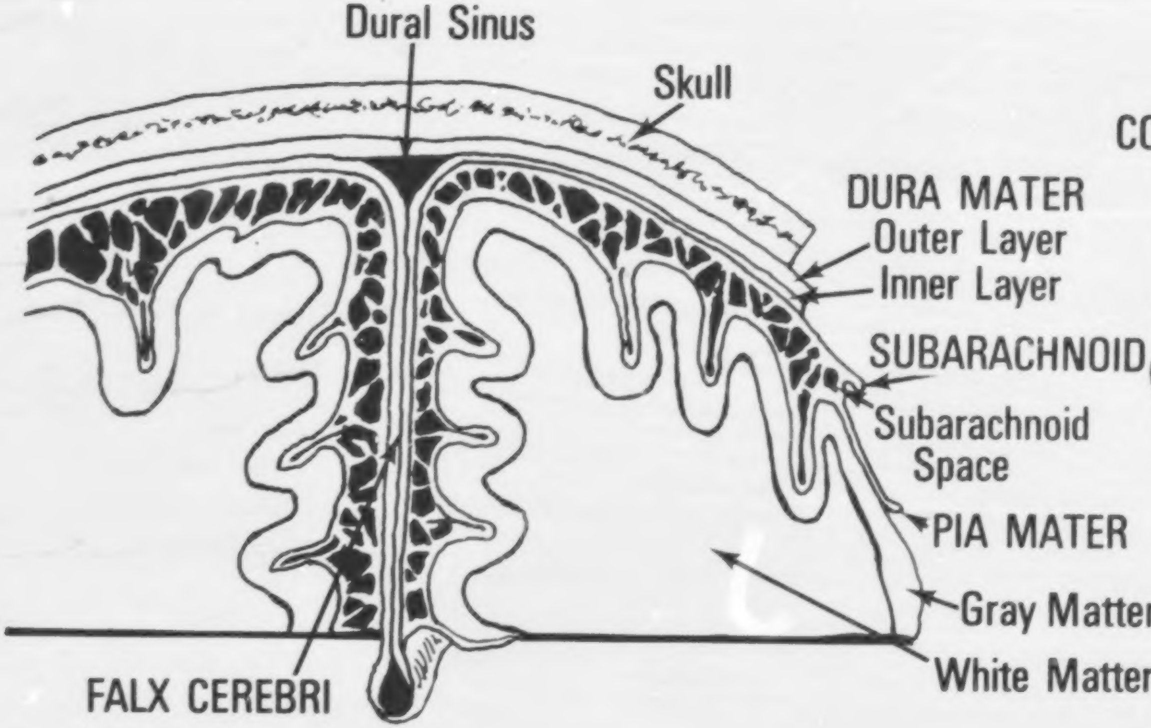
Functional Areas of the Brain


Motor Area
Sensory Area
Visual Area
Auditory Area
Cranial Nerves V, VI, VII, VIII
Cranial Nerves IX, X, XI, XII
Balance, Equilibrium, Coordination, Muscle Tone

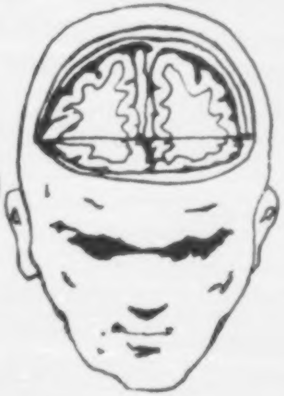
Reflex Arc


Central Neuron
White Matter
Gray Matter
Cell Body
Spinal Nerve
Effector
Motor Neuron
Sensory Neuron
Receptor

Coronal Section of Top of Head


Dural Sinus
Skull
DURA MATER
Outer Layer
Inner Layer
SUBARACHNOID
Subarachnoid Space
PIA MATER
Gray Matter
White Matter
FALX CEREBRI

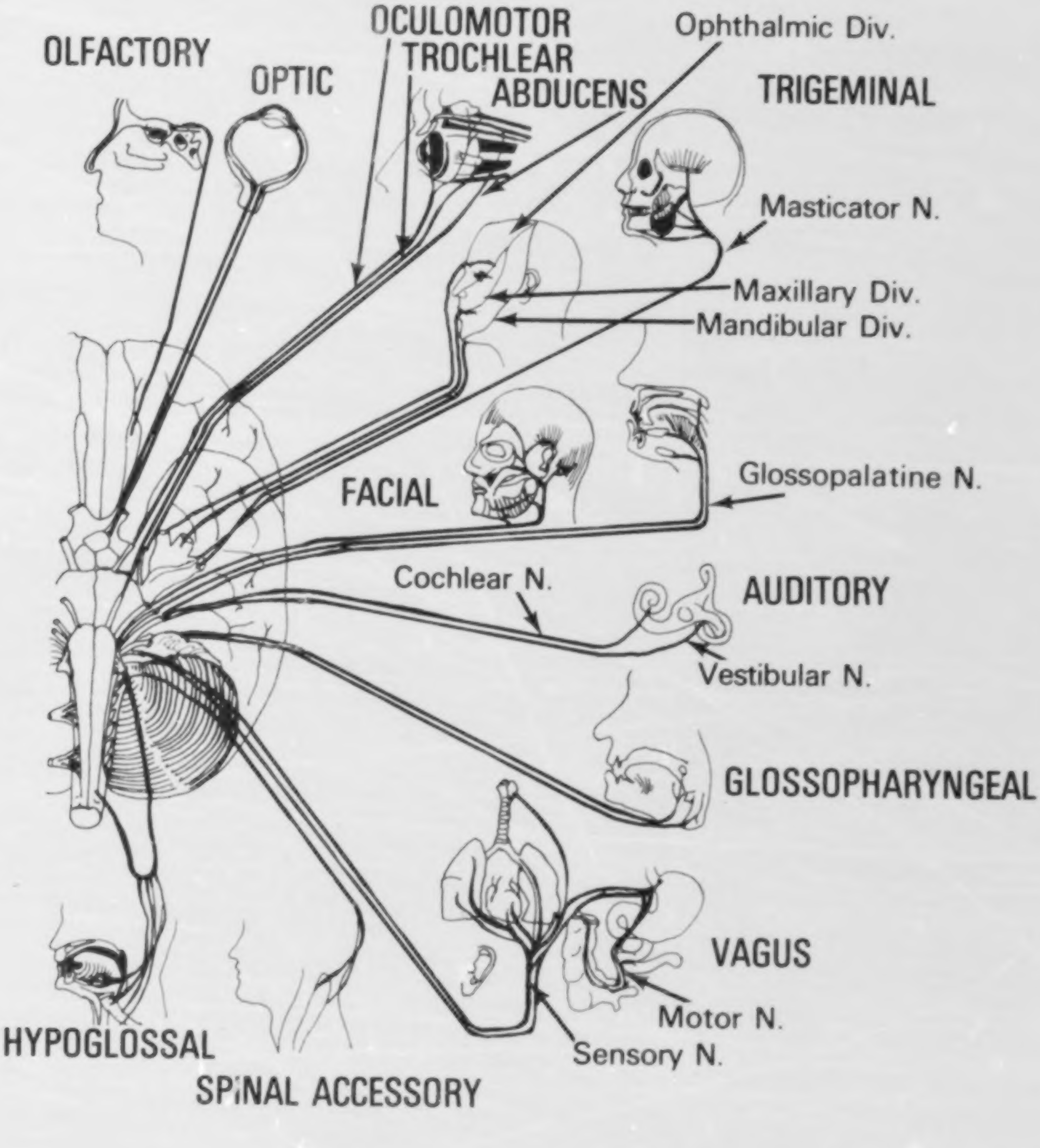
CORONAL SECTION



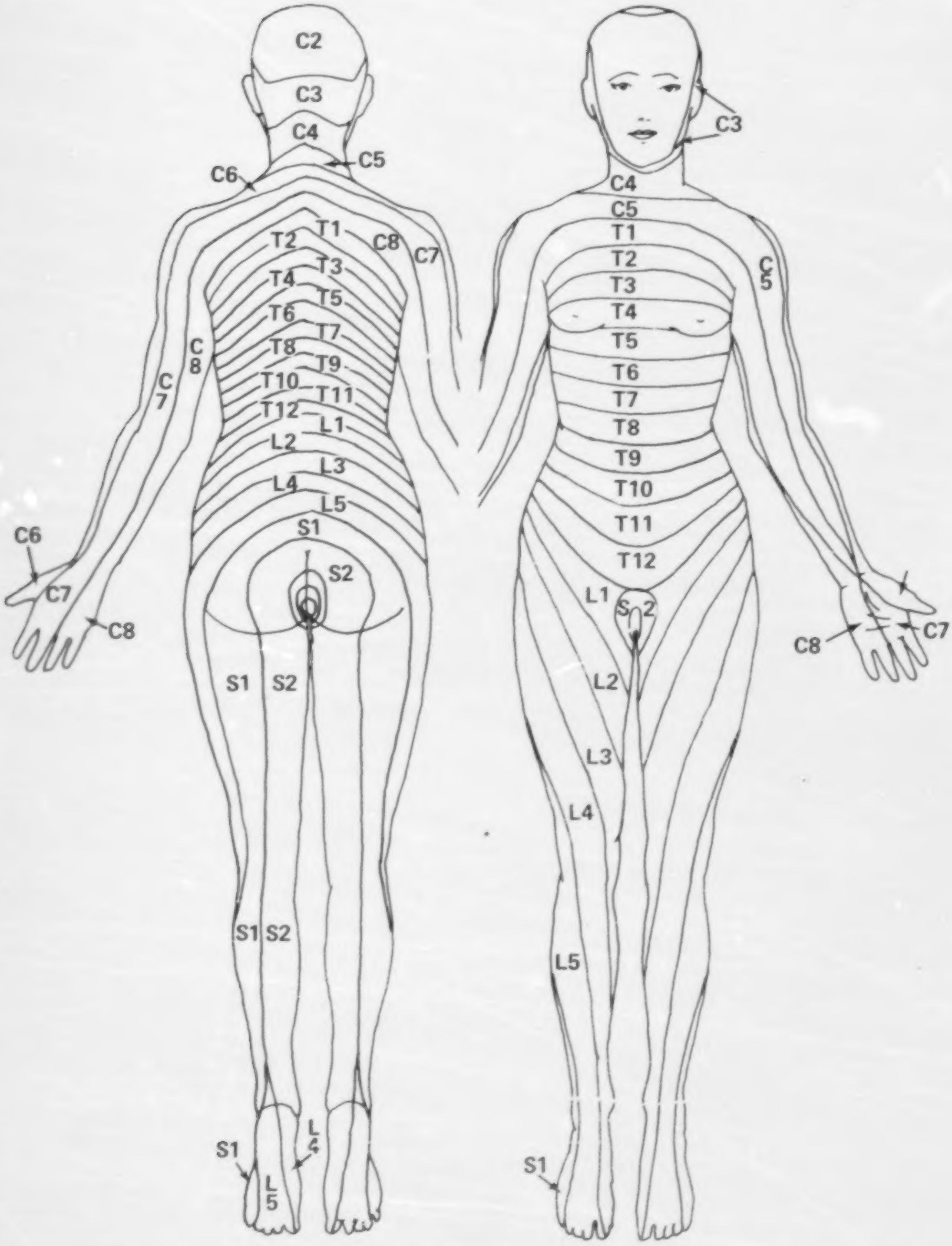
TM 10

N. I - 459-C

The Cranial Nerves


OLFACTORY
OPTIC
OCULOMOTOR
TROCHLEAR
ABDUCENS
Ophthalmic Div.
TRIGEMINAL
Masticator N.
Maxillary Div.
Mandibular Div.
FACIAL
Glossopalatine N.
Cochlear N.
AUDITORY
Vestibular N.
GLOSSOPHARYNGEAL
VAGUS
Motor N.
Sensory N.
HYPOGLOSSAL
SPINAL ACCESSORY

The Dermatomes


C2
C3
C4
C5
C6
T1
T2
C8
C7
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
L1
L2
L3
L4
L5
S1
S2
C
8
C
7
C6
C7
C8
S1
S2
S1
S2
S1
L
4
L
5
C3
C4
C5
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
C
5
L1
S 2
L2
L3
L4
L5
C8
C7
S1

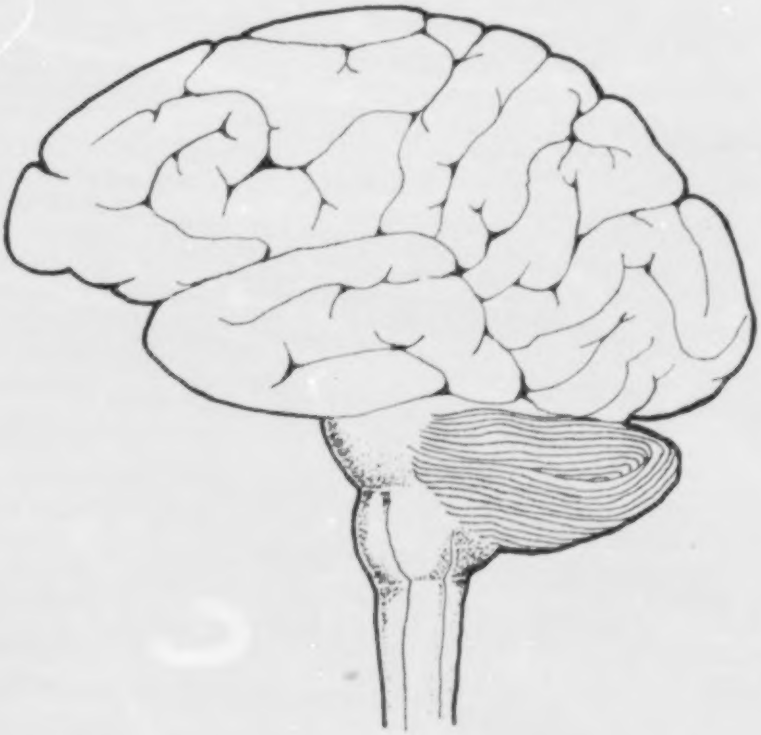
THE NERVOUS SYSTEM
UNIT XIII

ASSIGNMENT SHEET #1--THE BRAIN

1. On the diagram label the parts of the central nervous system: cerebrum, cerebellum, pons, medulla, and spinal cord.

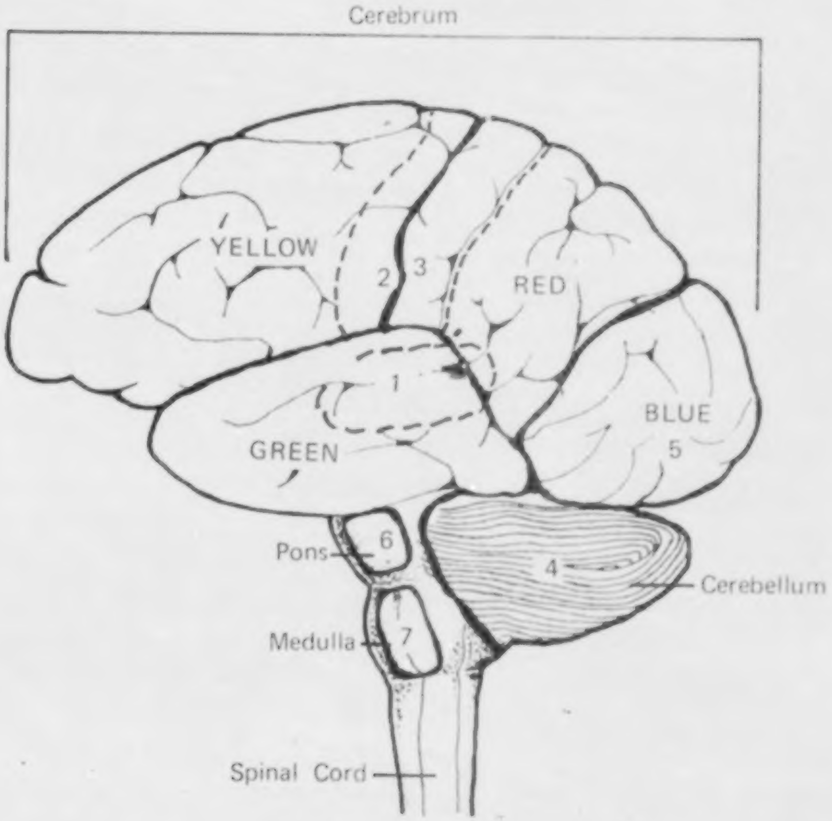
2. Color the lobes of the cerebrum using yellow for the frontal, red for the parietal, blue for the occipital, and green for the temporal lobes.

3. Outline the areas of function and number them as follows: auditory (1), motor (2), sensory (3), equilibrium and coordination (4), visual (5), cranial nerves five through eight (6), and cranial nerves nine through twelve (7).



THE NERVOUS SYSTEM
UNIT XIII

ANSWERS TO ASSIGNMENT SHEET #1


Cerebrum
YELLOW
2
3
RED
1
BLUE
5
GREEN
6
Pons
4
Cerebellum
7
Medulla
Spinal Cord

THE NERVOUS SYSTEM
UNIT XIII

JOB SHEET #1--TEST REFLEXES

I. Equipment needed--Percussion hammer

II. Test the following reflexes on other students

A. Plantar reflex--Stroke the outer side of the sole of the foot with a blunt instrument from heel to toe

(NOTE: The normal reaction should be flexion of the great toe. The abnormal reaction would be extension of the great toe with a fanning spread of other toes. This extensor reflex is called the Babinski reflex.)

B. Ankle jerk--Tap the achilles tendon with the flat side of the percussion hammer

(NOTE: The normal reaction should be extension followed by flexion of the ankle. The abnormal reaction would be absent or exaggerated action.)

C. Kneejerk or patellar reflex--Tap knee just above or below the patella

(NOTE: The normal reaction should be extension of the lower leg. The abnormal reaction would be absent or exaggerated action.)

THE NERVOUS SYSTEM
UNIT XIII

JOB SHEET #2--IDENTIFY THE PARTS OF A BRAIN

I. Equipment and materials needed

   A. An entire animal brain from a meat packing plant or butcher shop

   B. Dissecting instruments

II. Procedure

   A. Examine the intact specimen to identify:

      1. The cerebrum and its hemispheres, lobes, and fissures

      2. The cerebellum

      3. The medulla

   B. Separate the two hemispheres of the cerebrum and cut the brain into two halves

   C. Locate the smoothly-lined cavity extending into the cerebrum in which fluid is normally found (ventricles)

   D. Observe the thin covering of the brain tissue, the meninges

   E. Observe the approximate location of the functional areas as given in the information sheet

   F. Cut through the brain tissue and observe the gray matter and white matter. Can individual nerve cells and fibers be distinguished with the naked eye?

THE NERVOUS SYSTEM
UNIT XIII

JOB SHEET #3--TEST CRANIAL NERVES

I. Equipment and materials needed

   A. Substance for testing sense of smell

   B. Snellen eye chart or printed page with varying sizes of letters

   C. Pin or other sharp instrument

   D. Warm and cold objects, such as a small metal object that can be warmed or cooled

   E. Items to taste--Salt, sugar, and something bitter such as quinine

II. Procedure

   A. Olfactory--Test for smell by closing each side of the nose with finger while testing the other side

   B. Optic--Test using eye chart or by reading a printed page of varying size of printed letters

   C. Oculomotor--Test by raising upper eyelid and by having person turn eyes from side to side without turning head

   (NOTE: Damage to third nerve may also cause blurred or double vision.)

   D. Trochlear--Test by having eyes turn up and then turn side to side without moving head

   E. Trigeminal

      1. Test the parts of the nerve by asking the person to clench his teeth (motor portion)

      2. Test by checking face for reaction to pain and temperature (sensory portion)

   (NOTE: Injury to one part of the fifth nerve may cause loss of sensation in the cornea and conjunctiva which can be tested only with special equipment.)

   F. Abducens--Have person turn eyes from side to side without moving his head

   (NOTE: There are six muscles which control eye movements. They perform as prime mover and antagonist; that is, when one contracts, its opposite relaxes.)

   G. Facial

JOB SHEET #3

1. Test by having person wrinkle his forehead, frown, whistle, and close his eyelids tightly

2. Test the sensory function by having patient taste sugar, salt, and quinine or some other bitter substance

H. Auditory

1. Test hearing portion of nerve function by observing the person's ability to hear a whispered voice

   a. Have person stand fifteen feet from examiner

   b. Have him cover ear closest to examiner with his hand to see if he can hear examiner's whisper with the uncovered ear

2. Test equilibrium or balance portion of the auditory nerve by using the past-pointing test--Ask the person to raise his arms straight out to the side and touch his index fingers together, first with the eyes open and then with the eyes closed

   (NOTE: Normally the person should be able to touch the fingers together as well with eyes closed as open.)

I. Glossopharyngeal

1. Test taste on posterior one-third of tongue

2. Test ability to swallow

J. Accessory

1. Test trapezius muscle by having person raise his shoulders against resistance by pressure from the examiner's hands

2. Test sternocleidomastoid muscle by having person turn his head to right and to left against resistance of examiner's hands

K. Hypoglossal--Have person protrude his tongue

(NOTE: Normally the tongue will protrude in the midline.)

THE NERVOUS SYSTEM
UNIT XIII

TEST

1. Match the terms on the right to the correct definition.

______a. Study of the nervous system

______b. Nerve endings that carry out actions

______c. Basic nerve cell

______d. Pertaining to the back of the head

______e. Junction of an axon and one or more dendrites

______f. Group of cells functioning in reception of stimuli; receiving end of sensory nerves

______g. Bundle of nerve fibers, blood vessels, and connective tissue outside the central nervous system

______h. Repair, regrowth, or restoration of a part

______i. Bundle of nerve cells within the central nervous system

______j. Any agent or influence that produces a response or increase in activity in living protoplasm

______k. Mass of nerve tissue, principally nerve cell bodies, outside the central nervous system

______l. One of the small cavities of the brain

______m. Threadlike projections of cytoplasm from the cell body of a neuron; axons and dendrites

1. Gray matter
2. Ventricle
3. Stimulus
4. Affector
5. Effector
6. Nerve fibers
7. Nerve
8. Neuron
9. Ganglion
10. Cerebral cortex
11. Neuroglia
12. Nerve tract
13. Synapse
14. Neurology
15. White matter
16. Regeneration
17. Occipital
18. Cerebrospinal fluid

______n. Watery fluid found in the ventricles of the cerebrum and surrounding the spinal cord

______o. Supporting structure for nerve tissue consisting of blood vessels, connective tissue, and specialized cells

______p. Nonmyelinated nervous tissue; primarily the bodies of nerve cells

______q. Nervous tissue composed of myelinated nerve fibers

______r. Outer layer of gray matter of the cerebrum

2. List four functions of the nervous system.

a.

b.

c.

d.

3. List the three subdivisions of the nervous system and their components.

a.

1)

2)

b.

1)

2)

c.

1)

2)

4. Name the three parts of a neuron giving one function of each.

   a.

   b.

   c.

5. Describe three types of neurons.

   a. Sensory or afferent

   b. Central, connecting, or internuncial

   c. Motor or efferent

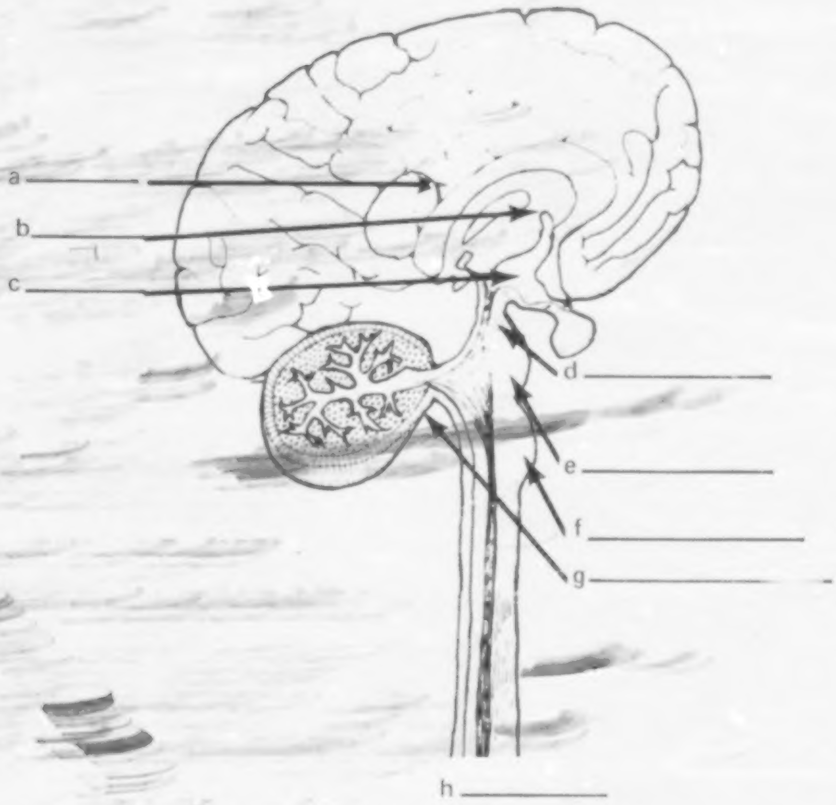
6. Describe the structure of an axon including the names of the layers and the difference between white and gray matter.

7. Discuss the regeneration of peripheral nerves.

8. Describe the transmission of nerve signals giving an example.

9. Identify the main parts of the central nervous system by placing the correct number in each blank.

1) Cerebellum
2) Pons (bridge)
3) Spinal cord
4) Medulla oblongata
5) Cerebrum
6) Thalamus
7) Midbrain
8) Hypothalamus



10. Name the function of each of the three areas of the cerebral cortex.

a. Association areas

b. Motor areas

c. Sensory areas

11. Match the parts of the brain on the right with their function.

______a. Serves as a reflex center

______b. Controls vision

______c. Maintenance of balance, equilibrium, coordination, and muscle tone

______d. Controls voluntary muscles and judgment

______e. Controls hearing, smell, and taste

______f. Controls sensory functions such as pain, touch, and temperature interpretation

______g. Serves as relay center; monitors sensory stimuli

______h. Controls body temperature, water balance, sleep, appetite, some emotions such as fear and pleasure, and both divisions of the autonomic nervous system

______i. Connecting link between the cerebrum and cerebellum

______j. Controls vital functions such as breathing, heart rate, blood pressure, swallowing, and coughing

1. Cerebellum
2. Pons
3. Hypothalamus
4. Occipital lobe of cerebrum
5. Parietal lobe of cerebrum
6. Medulla
7. Midbrain
8. Thalamus
9. Temporal lobe of cerebrum
10. Frontal lobe of cerebrum

12. Describe the spinal cord.

13. List two functions of the spinal cord.

    a.

    b.

14. Describe the protection of the central nervous system.

15. Discuss blood supply to the brain.

16. Discuss the formation, purpose, and absorption of cerebrospinal fluid.

17. List the number and four general functions of cranial nerves.

a.

b. Functions

1)

2)

3)

4)

18. Match the name and number of the cranial nerves on the right to the correct function.

_____a. Swallowing, hunger, speech muscles, breathing, heart rate, peristalsis, control of glands in stomach and pancreas

_____b. Taste, swallowing

_____c. Controls tongue muscles

_____d. Sense of sight

_____e. Three branches supply cornea and conjunctiva; upper portion of face, ear, lower lip, teeth and gums; and muscles for chewing

_____f. Sense of hearing and balance

_____g. Supplies facial muscles, middle ear, taste

_____h. Controls one eyeball muscle

_____i. Controls muscles of neck and upper back

_____j. Controls lateral eye movement

_____k. Controls part of the eyeball muscles

_____l. Sense of smell

1. Auditory (Eight)
2. Hypoglossal (Twelve)
3. Abducens (Six)
4. Olfactory (One)
5. Vagus (Ten)
6. Spinal accessory (Eleven)
7. Trigeminal (Five)
8. Oculomotor (Three)
9. Optic (Two)
10. Trochlear (Four)
11. Glossopharyngeal (Nine)
12. Facial (Seven)

19. List the names of the spinal nerves and the number of pairs of each.

Spinal nerves   Number of pairs

a.

b.

c.

d.

e.

20. Describe a reflex arc giving one example.

21. Name the function and divisions of the autonomic nervous system.

a. Function

b. Divisions

1)

2)

22. List eight ways to maintain the nervous system.

a.

b.

c.

d.

e.

f.

g.

h.

22. Demonstrate the ability to:

    a. Test reflexes.

    b. Identify the parts of the brain.

    c. Test cranial nerves.

    (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

THE NERVOUS SYSTEM
UNIT XIII

ANSWERS TO TEST

1.
   - a. 14
   - b. 5
   - c. 8
   - d. 17
   - e. 13
   - f. 4
   - g. 7
   - h. 16
   - i. 12
   - j. 3
   - k. 9
   - l. 2
   - m. 6
   - n. 18
   - o. 11
   - p. 1
   - q. 15
   - r. 10

2. Any four of the following
   - a. Reception of external impressions and information
   - b. Coordination of internal messages
   - c. Response and readjustment to internal and external stimuli
   - d. Storage of information
   - e. Coordination of all body activities

3.
   - a. Central nervous system; CNS
     - 1) Brain
     - 2) Spinal cord
   - b. Peripheral nervous system; PNS
     - 1) Cranial nerves
     - 2) Spinal nerves
   - c. Autonomic nervous system; involuntary nervous system; ANS
     - 1) Sympathetic division; thoracolumbar
     - 2) Parasympathetic division; craniosacral

4.
   - a. Cell body; cyton
     - 1) Acts as a sending and receiving center
     - 2) Carries on metabolism
     - 3) Stores energy

b. Dendrite--Carries impulses to the cell body

c. Axon--Conducts impulses away from the cell body

5. Description should include:

   a. Receive messages from all parts of the body and transmit them to the central nervous system

   b. Conduct messages or impulses from sensory to motor nerves

   c. Transmit messages from the central nervous system to all parts of the body

6. Description should include:

   a. Axis cylinder--Central core of jellylike material

   b. Myelin sheath--Fatty covering which provides insulation and speeds impulse conduction; nerve fibers covered with myelin are called myelinated; myelin sheath gives white appearance to white matter; in contrast, gray matter is nonmyelinated

   c. Neurilemma--Thin membrane with nuclei called Schwann cells completely covering the nerve fiber; its function is regeneration of nerve fibers

7. Discussion should include:

   a. Neurons do not multiply as other cells do to replace those destroyed by injury or disease

   b. Nerve fiber of the peripheral nervous system can regenerate only if the cell body is intact

   c. The part of the fiber separated from the cell body disintegrates

   d. Some portion of the fiber attached to the cell body disintegrates

   e. At the site of the injury the neurilemma starts to regenerate; if the cut ends of the neurilemma are not too far apart, they grow together to re-establish the neurilemmar tube

   f. Remaining stump of the axon attached to the cell body is then able to grow in the repaired tube

   g. Surgeon is able to aid regeneration of peripheral nerves by aligning the cut ends of a nerve; in some cases the gap of injury can be spanned by artificial tubes

   h. Nerve fibers of the central nervous system are not covered with neurilemma and therefore are incapable of regeneration when damaged

8. Description should include:

   a. When a neuron receives a signal, it sends an impulse on to the next neuron across the synapse between axon and dendrite

   b. Two or more neurons arranged in a chain function to conduct impulses from one place to another

   c. Impulses pass only in one direction from receptor dendrite to cell body to axon to dendrite and so on

   d. When a nerve impulse is blocked, the blocking usually takes place at a synapse

   e. Example of signal transmission When the hand touches something hot, the receptors start a message over the afferent neurons to the central nervous system; the connecting neurons of the central nervous system interpret the message and determine the course of action; a further impulse is sent out over the efferent neurons to bring about a proper response, in this instance to remove the hand from the source of heat

9. a. 5

   b. 6

   c. 8

   d. 7

   e. 2

   f. 4

   g. 1

   h. 3

10. a. Concerned with higher mental functions such as learning, memory, reasoning, judgment, conscience, thinking, insight, and emotions

    b. Control movement of muscles

    c. Receive impulses of heat, cold, touch, pain, pressure, and proprioception from receptors

11. a. 7

    b. 4

    c. 1

    d. 10

    e. 9

    f. 5

    g. 8

    h. 3

    i. 2

    j. 6

12. Description should include:

    a. Oval-shaped bundle of nerves extending from the medulla to the level of the second lumbar vertebra where it begins to taper into a "horse tail" of fibers that finally end in the coccygeal area

b. Cross section of the spinal cord reveals an inner H-shaped area of gray matter surrounded by white matter

13. a. Conducts impulses to and from the brain

b. Serves as a reflex center to receive and transmit messages through the nerve fibers

14. Description should include:

a. Nervous tissue is fragile and easily injured; surrounded by fluid, membranes, and bones for protection

b. Cranial bones encase the brain; vertebrae encase the spinal cord

c. Meninges, a tough membrane, lines cranial bones and vertebrae with three layers of tissue

1) Dura mater, outer layer--Provides protection

2) Arachnoid membrane--Resembles a cobweb with cerebrospinal fluid filling the space under it

3) Pia mater, inner layer--Thin vascular layer containing blood vessels which bring oxygen and carry away waste products

15. Discussion should include:

a. Four arteries, two internal carotids and two vertebrals, unite to form the circle of Willis at the base of the brain

b. Circular arrangement of the arteries equalizes the circulation of blood and provides an alternate passageway for blood in case of blockage of one of the arteries

c. Approximately fifteen percent of the total output of the heart is needed by the brain for normal function

d. Numerous centers of function in the brain require an adequate supply of oxygen at all times

16. Discussion should include:

a. Formation--Produced constantly by filtration from the blood in the capillaries of the brain and in the ventricles

b. Purpose--Cerebrospinal fluid circulates around the brain and spinal cord maintaining an even pressure and acting as a cushion or shock absorber

c. Absorption--Continually absorbed by the blood vessels to maintain constant volume, pressure, and composition

17. a. Twelve pairs of cranial nerves

b. Functions

1) Convey special sense impulses such as smell, vision, and hearing

2) Convey general sense impulses such as pain, touch, temperature, deep muscle sense, and pressure and vibration senses

3) Control voluntary muscles

4) Control glands and involuntary muscles

18. a. 5

b. 11

c. 2

d. 9

e. 7

f. 1

g. 12

h. 10

i. 6

j. 3

k. 8

l. 4

19.

Spinal nerves	Number of pairs
a. Cervical	Eight
b. Thoracic	Twelve
c. Lumbar	Five
d. Sacral	Five
e. Coccygeal	One

20. a. Simplest type of nerve response which is unconscious and involuntary

b. Involves an affector, an afferent neuron, a connecting neuron in the spinal cord, an efferent neuron, and an effector

c. Any one of the following examples: Kneejerk or patellar, abdominal, achilles, biceps, triceps, and plantar reflexes; blinking of eye when something touches it; or secretion of saliva at sight or smell of food

21. a. Function--Regulates the action of the glands, the smooth muscles of the hollow organs, and the heart automatically without one being consciously aware of them much of the time

b. Divisions

1) Sympathetic; thoracolumbar

2) Parasympathetic; craniosacral

22. Any eight of the following

    a. Adequate diet with particular attention to Vitamins A, B, C, riboflavin, niacin, and pyridoxine which help maintain healthy nervous tissue; proteins necessary to maintain tissue; and carbohydrates essential for energy

    b. Avoidance of excessive use of substances which may adversely affect the nervous system

    c. Prompt care of infections and injuries to minimize loss of nerve function

    d. In cases of nerve damage with loss of function or sensation, extra care is necessary to prevent further tissue damage

    e. Genetic counseling for parents who are carriers of inherited disorders of the nervous system

    f. Testing of newborn infants for phenylketonuria

    g. Treatment of inherited or congenital defects to the fullest extent possible

    h. Adequate sleep to provide rest for the nervous system

    i. Injections of medicines given in areas where there is minimum chance of contact with nerves

    j. Periods of relaxation

    k. Periods of productive activity

    l. Practice of good mental hygiene

    m. Use of drugs only by physician's orders

23. Performance skills will be evaluated to the satisfaction of the instructor.

THE SPECIAL SENSES
UNIT XIV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to match terms and definitions associated with the special senses. She should be able to describe the structure and function of the eye and the ear and ways to care for them. The student should be able to list some of the most important senses and discuss the senses of taste and smell. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the special senses to the correct definition.
2. Name five of the most important senses.
3. Describe the protection of the eye.
4. Match the structures of the eye to their descriptions.
5. Match the accessory eye structures to their descriptions.
6. Discuss three factors in caring for the eyes.
7. Match the structures of the ear to their descriptions.
8. List three ways to care for the ears.
9. Discuss the sense of taste.
10. Discuss the sense of smell.
11. Demonstrate the ability to:
    a. Measure vision.
    b. Test hearing.

THE SPECIAL SENSES
UNIT XIV

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Make transparencies.

   D. Discuss terminal and specific objectives.

   E. Discuss information sheet.

   F. Using models, identify the parts of the eye and the ear as listed on the information sheet.

   G. Demonstrate and discuss procedures outlined in the job sheets.

   H. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to accomplish the procedures outlined in the job sheets.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1-The Eye and Accessory Structures

      2. TM 2-The Eye

      3. TM 3-Intrinsic Muscles of the Eyeball

4. TM 4 Lacrimal Gland
5. TM 5 The Ear
6. TM 6 The Tongue and Taste
7. TM 7 The Nose and Sense of Smell

D. Job sheets

1. Job Sheet #1 Measuring Vision
2. Job Sheet #2 Testing Hearing

E. Test

F. Answers to test

II. References:

A. Keane, Claire Brackman. *Essentials of Nursing*. Philadelphia, Pennsylvania: W. B. Saunders Company, 1964.

B. Memmler, Ruth L. and Ruth B. Rada. *The Human Body in Health and Disease*. Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing*. Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. von Gremp, Zella and Lucile Broadwell. *Practical Nursing Study Guide and Review*. Philadelphia, Pennsylvania: J. B. Lippincott Company, 1965.

III. Additional materials:

A. Films

1. "Learning About the Nose," Oklahoma State Department of Health.
2. "Hear Better: Healthy Ears," Oklahoma State Department of Health.
3. "Eyes and Their Care," Oklahoma State Department of Health.
4. "You and Your Sense of Smell and Taste," Oklahoma State Department of Health.
5. "You and Your Sense of Touch," Oklahoma State Department of Health.
6. "You and Your Ears," Oklahoma State Department of Health.

7. "How the Ear Functions," Oklahoma State Department of Health.
8. "See Better: Healthy Eyes," Oklahoma State Department of Health.

B. Filmstrip--"The Special Senses," Robert J. Brady Company.

THE SPECIAL SENSES
UNIT XIV

INFORMATION SHEET

I. Terms and definitions

A. Ophthalmology--Study of the eye and its diseases

B. Otology--Study of the ear and its diseases

C. Sense--General faculty by which conditions outside or inside the body are perceived

D. Orbit--Bony cavity in which the eye is located

E. Canthus--Angle at either end of the slit between the eyelids

F. Pupil--Opening in the iris which permits the light to enter

G. Conjunctiva--Saclike mucous membrane which helps keep the eye moist

H. Ophthalmologist--Doctor who specializes in the treatment of eye disorders

(NOTE: This is the same as oculist.)

I. Sclera--White part of the eye

J. Iris--Colored part of the eye

K. Intrinsic--Within a part

L. Extrinsic--Outside a part

M. Levator--Muscle that elevates or raises a part

N. Cerumen--Waxlike, soft, brown secretion found in the external ear canal

O. Malleus--Hammer-shaped bone of the middle ear

P. Incus--Anvil-shaped bone of middle ear

Q. Stapes--Stirrup-shaped bone of middle ear

R. Auditory--Pertaining to the sense of hearing

S. Equilibrium--Normal oriented state of the body in respect to its environment

T. Taste buds--Receptors of taste found in the tongue

INFORMATION SHEET

- U. Olfactory--Pertaining to sense of smell
- V. Accommodation--Adjustment by the lens to make a sharp, clear image on the retina

II. Most important of senses

- A. Visual--Eye
- B. Hearing--Ear
- C. Taste--Tongue receptors
- D. Smell--Upper nasal cavity
- E. Hunger and thirst--Various internal structures
- F. Touch, pressure, heat, cold, and pain--Skin
- G. Position and balance--Muscles, joints, and semicircular canals in the ear

III. Protection of the eye (Transparency 1)

(NOTE: Since the eye is as delicate as the brain, it too is well protected.)

- A. The eye lies in a bony cavity in the skull cushioned by a layer of fatty tissue
- B. Eyelids, eyelashes, and eyebrows protect eyes from bright light and from foreign bodies such as dust and perspiration
- C. Lacrimal apparatus helps keep eye moist

IV. Structures of the eye and their functions (Transparencies 2 and 3)

- A. Conjunctiva--Covers the front of the eyeball; lines the eyelid
- B. Choroid--Middle vascular layer on lateral and posterior eyeball; supplies oxygen and nutrients
- C. Iris--Circular muscle; regulates amount of light entering pupil
- D. Ciliary muscle--Controls shape of lens to make sharp, clear image

  (NOTE: The iris and ciliary muscles are intrinsic eye muscles.)
- E. Sclera--Outer layer of firm, connective tissue; covering of eyeball
- F. Cornea--Clear, transparent part of the sclera on the front of eyeball; lets light through

INFORMATION SHEET

G. Lens--Circular jellylike suspension; focuses images on retina

H. Suspensory or ciliary ligament--Holds lens in place

I. Anterior chamber--Space in front of lens between cornea and iris

J. Posterior chamber--Space between iris and lens

(NOTE: Anterior and posterior chambers are filled with aqueous humor.)

K. Vitreous humor--Jellylike substance filling the eyeball posterior to the lens; maintains shape of eyeball

L. Retina--Inner layer of nerve tissue made up in part of rods and cones, special light-sensitive cells; receives visual images

M. Optic nerve--Carries visual impulses from retina to brain

V. Accessory eye structures (Transparencies 1, 2, and 4)

A. Lacrimal gland--Lies superior and lateral to eyeball; secretes tears which moisten and cleanse eye and destroy some bacteria

B. Lacrimal ducts--In upper and lower eyelids at inner canthus; carry tears from eye into nasal cavity

C. Extrinsic eye muscles--Six ribbonlike muscles which coordinate eye movements

D. Eyelid muscles--Levators open and close eyelids

E. Oculomotor nerve--Controls part of eye muscles

F. Ophthalmic nerve--Carries impulses of pain, touch, and temperature from eye and surrounding parts

VI. Care of the eyes

A. Well-balanced diet of basic four food groups

1. Eye health--Closely related to general health

2. Night blindness--Caused by Vitamin A deficiency

B. Accident prevention

1. Wear goggles to protect eyes when working with tools or other materials that may cause eye damage

INFORMATION SHEET

2. Wear goggles to protect eyes from strong light or glare

3. Use unbreakable lenses in glasses to prevent eye damage due to breakage

C. Prevention of eye strain

1. Use adequate light for work and reading

2. Use properly fitted glasses

3. When doing close work, look away periodically to rest eyes

4. When driving or watching television, shift focus point at intervals to rest eyes

5. Protect eyes from glare of sun or reflected light

6. Avoid light pollution

Examples: Flashing, black, or psychedelic lighting

D. Consultation with ophthalmologist or oculist for persistent eye symptoms

1. Headache associated with reading or close work

2. Discharge or hemorrhage

3. Pain

4. Difficulty in seeing

5. Blurred vision

6. Foreign body embedded in eyeball or eyelid

VII. Structures and functions of the ear (Transparency 5)

A. Outer ear

1. Pinna or auricle--Catches air vibrations or sounds

2. External auditory canal--Guides air vibrations to tympanum

3. Cerumen--Lubricates and protects external canal and tympanum

4. Tympanum--Protects middle ear; vibrates when sounds strike it

(NOTE: This is also called tympanic membrane or eardrum.)

INFORMATION SHEET

B. Middle ear

1. Ossicles (malleus, incus, and stapes)--Amplify sound waves received from tympanum; transmit waves to inner ear

2. Oval window--Separates middle and inner ear

3. Round window--Permits passage of sound waves from ossicles to inner ear

4. Eustachian tube--Regulates pressure in middle ear to equal pressure outside tympanum

C. Inner ear

1. Cochlea--Contains the organ of Corti, the organ for hearing

2. Vestibule--Controls sense of position

3. Semicircular canals--Control equilibrium

(NOTE: Functions of vestibule and semicircular canals are closely related.)

VIII. Caring for the ears

A. Prompt medical attention should be given to any abnormal symptom

B. Maintain cleanliness by using washcloth to cleanse pinna and opening of external auditory canal

C. Prevent middle ear infections by prompt attention to sore throats and other respiratory infections

D. Wear protective ear covering when working in noisy environment

E. Accurate testing for hearing ability should be done

F. Blow nose gently with both nostrils open

IX. Sense of taste (Transparency 6)

A. Taste buds relay impulses to two different nerves which carry the impulses to the brain

B. Taste buds are stimulated only if substance to be tasted is in solution

INFORMATION SHEET

C. Kinds of taste and location on tongue

  1. Sweet--Near the tip

  2. Sour--At the sides

  3. Salty--Near the tip

  4. Bitter--At the back

D. Involves two nerves in relaying impulses to brain

(NOTE: Facial and glossopharyngeal nerves perform other functions also.)

X. Sense of smell (Transparency 7)

A. Closely related to the sense of taste

B. Receptors located in the olfactory epithelium in upper part of the nasal cavity

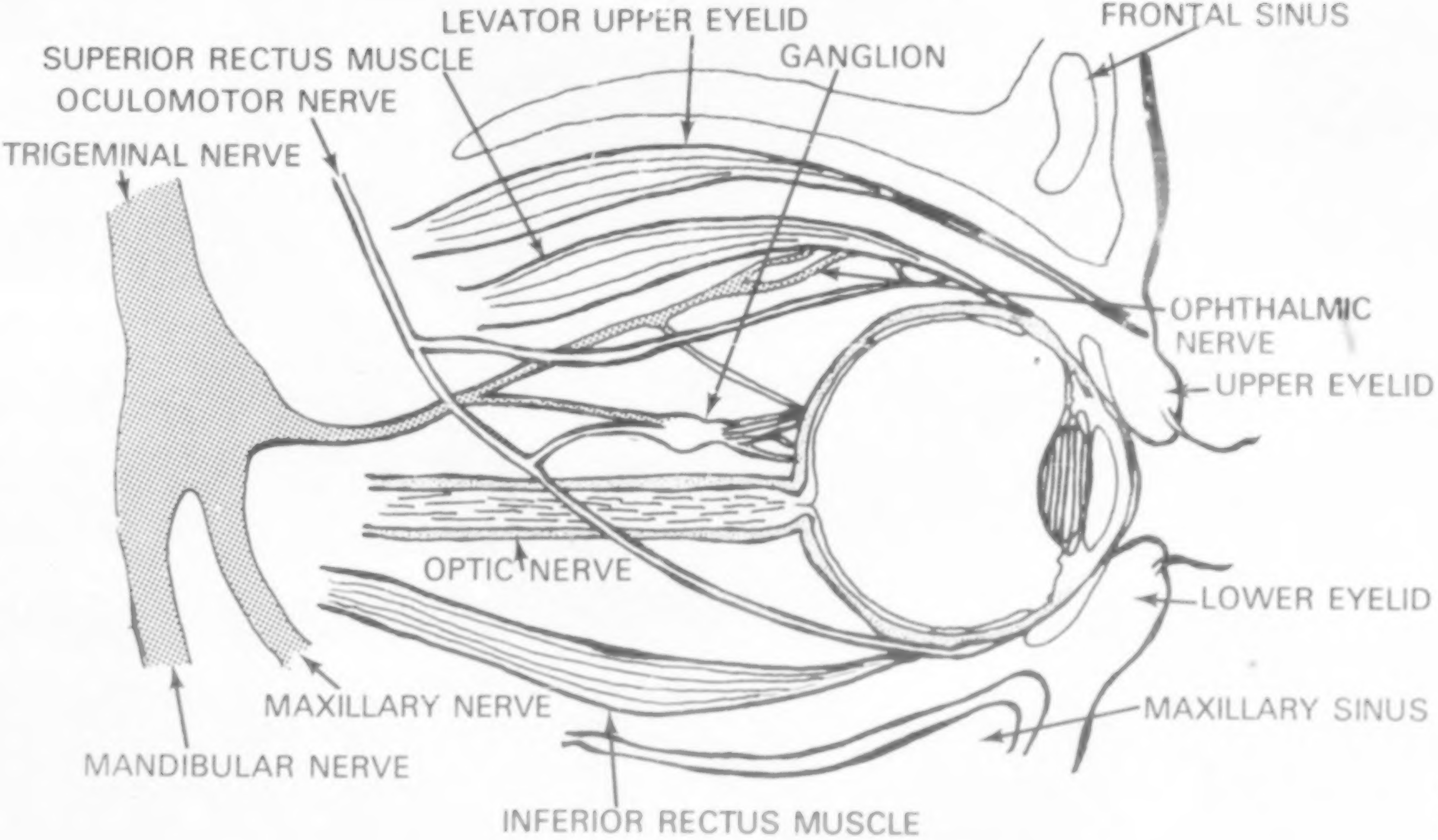
(NOTE: Because olfactory receptors are high in the nasal cavity, a person "sniffs" to bring odorous gases upward in the nose.)

C. Impulses of smell carried to the brain by the olfactory nerve

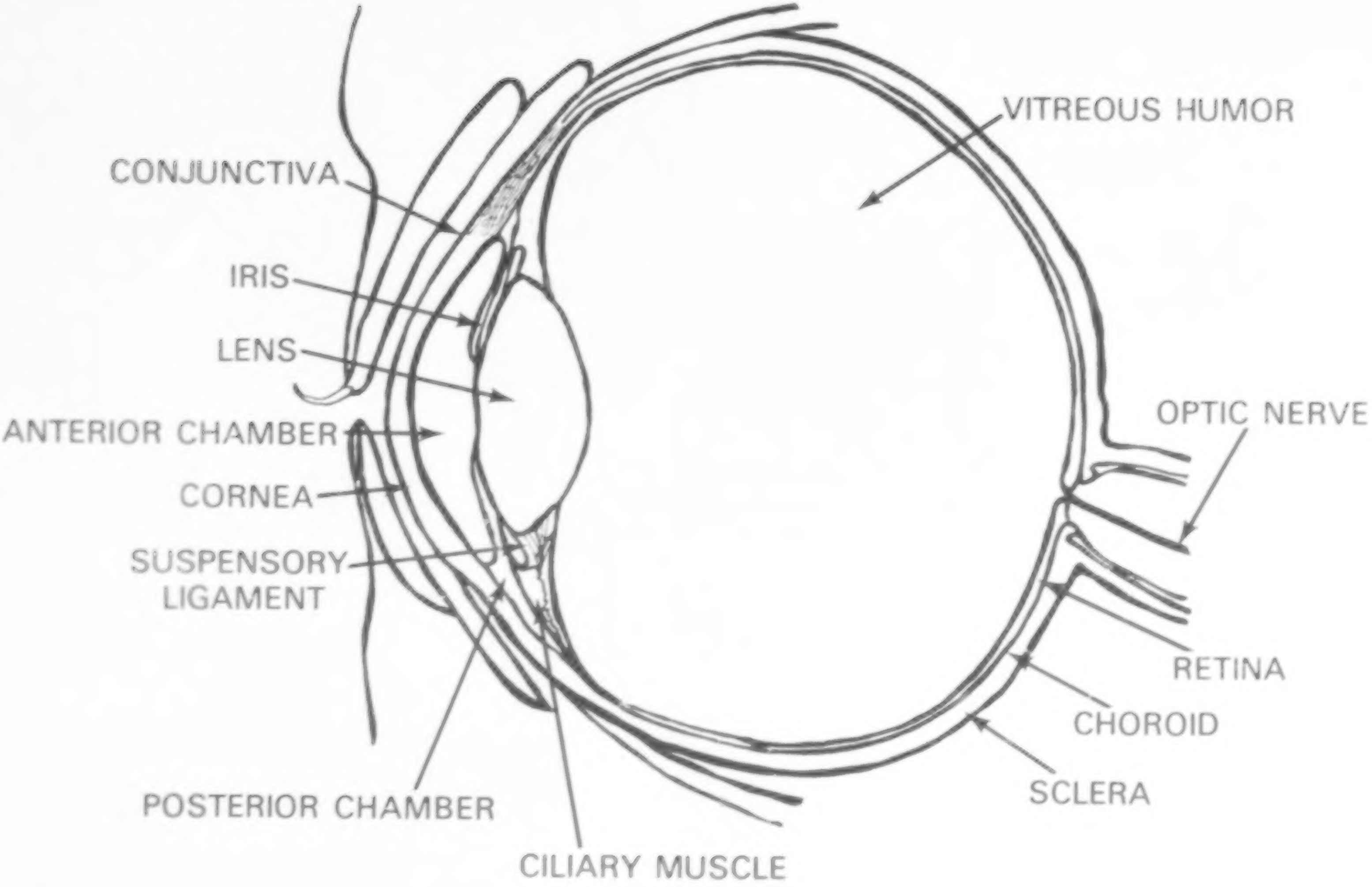
D. Olfactory nerves tire quickly and become less sensitive after detecting the same odor for a period of time

E. Involves one nerve, the olfactory

The Eye and Accessory Structures

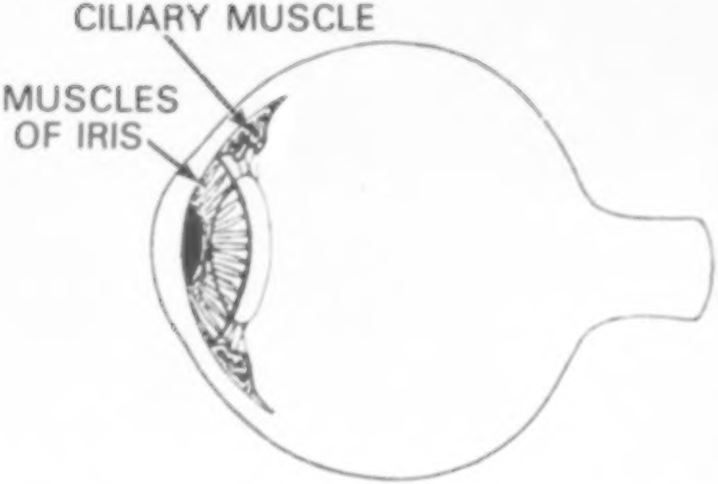

LEVATOR UPPER EYELID
FRONTAL SINUS
SUPERIOR RECTUS MUSCLE
GANGLION
OCULOMOTOR NERVE
TRIGEMINAL NERVE
OPHTHALMIC NERVE
UPPER EYELID
OPTIC NERVE
LOWER EYELID
MAXILLARY NERVE
MAXILLARY SINUS
MANDIBULAR NERVE
INFERIOR RECTUS MUSCLE

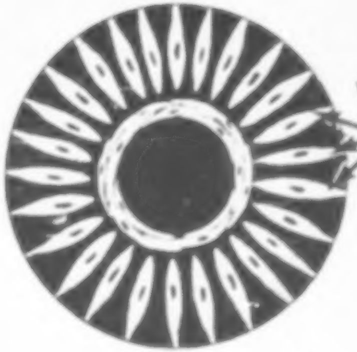
The Eye


VITREOUS HUMOR
CONJUNCTIVA
IRIS
LENS
ANTERIOR CHAMBER
CORNEA
SUSPENSORY LIGAMENT
OPTIC NERVE
RETINA
CHOROID
SCLERA
POSTERIOR CHAMBER
CILIARY MUSCLE

Intrinsic Muscles of the Eyeball

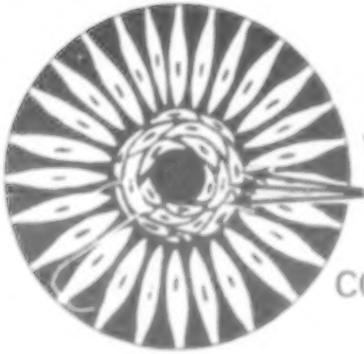
INTRINSIC EYE MUSCLES


CILIARY MUSCLE
MUSCLES OF IRIS

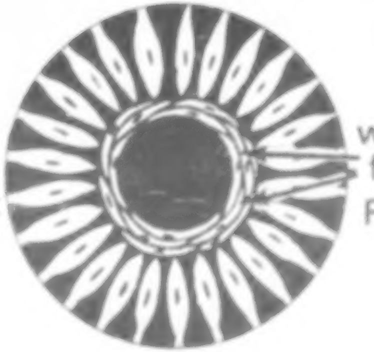


when radial muscle fibers of iris contract:

PUPIL IS DILATED

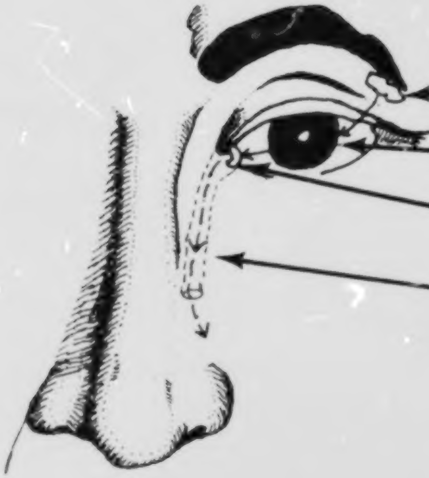


when circular muscle fibers of iris contract:
PUPIL IS CONSTRICTED



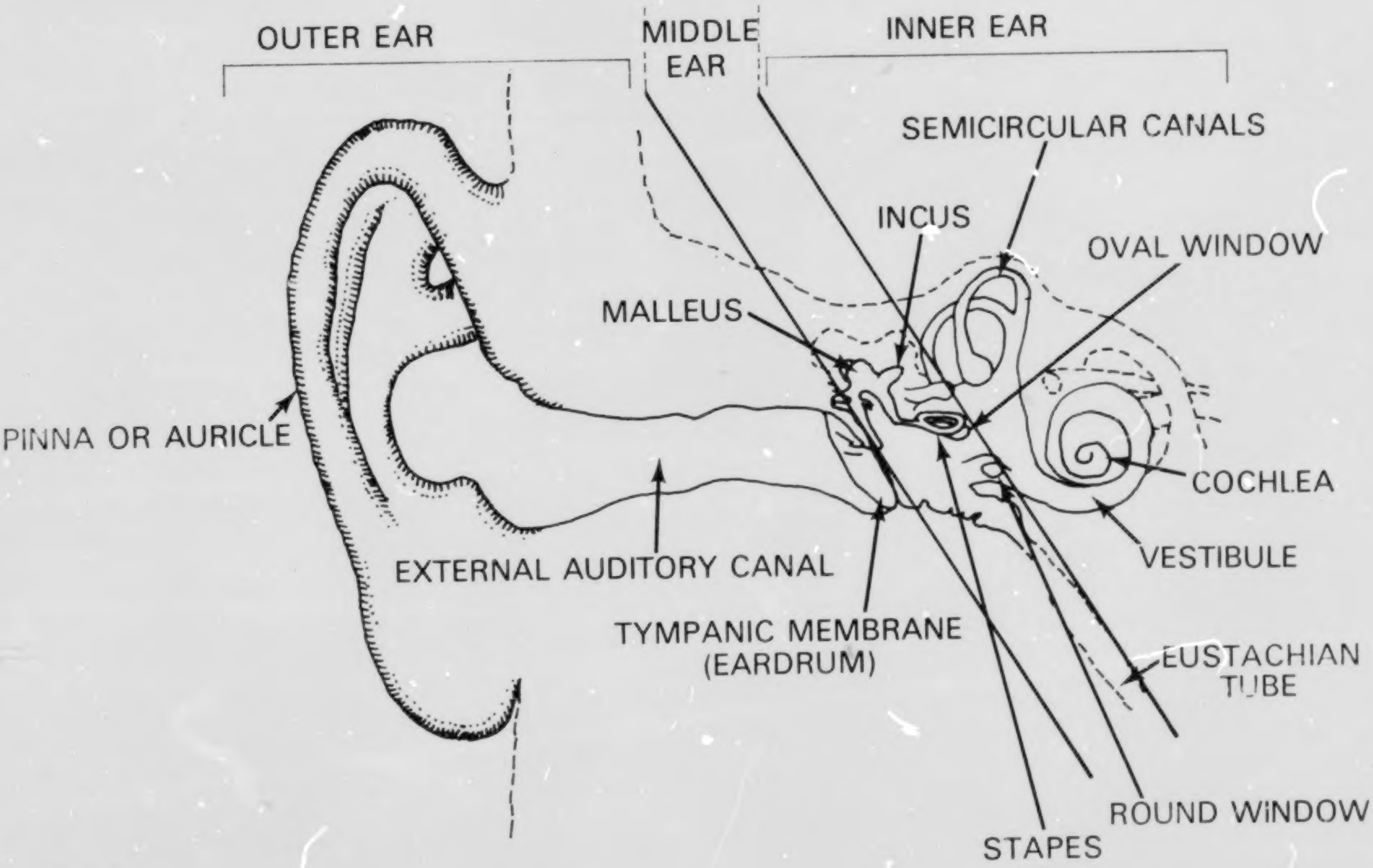
when circular muscle fibers of iris relax:
PUPIL IS DILATED

Lacrimal Gland



1. LACRIMAL GLAND RELEASES TEARS
2. TEARS WASH OVER EYEBALL
3. TEARS LEAVE EYE VIA LACRIMAL DUCT
4. WASH DOWN INTO NASOLACRIMAL DUCT

The Ear


OUTER EAR
MIDDLE EAR
INNER EAR
SEMICIRCULAR CANALS
INCUS
OVAL WINDOW
MALLEUS
PINNA OR AURICLE
COCHLEA
VESTIBULE
EXTERNAL AUDITORY CANAL
TYMPANIC MEMBRANE (EARDRUM)
EUSTACHIAN TUBE
ROUND WINDOW
STAPES

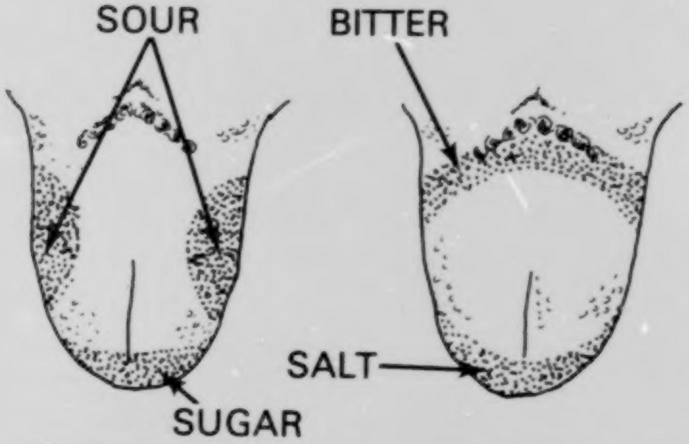
TM 5

1050

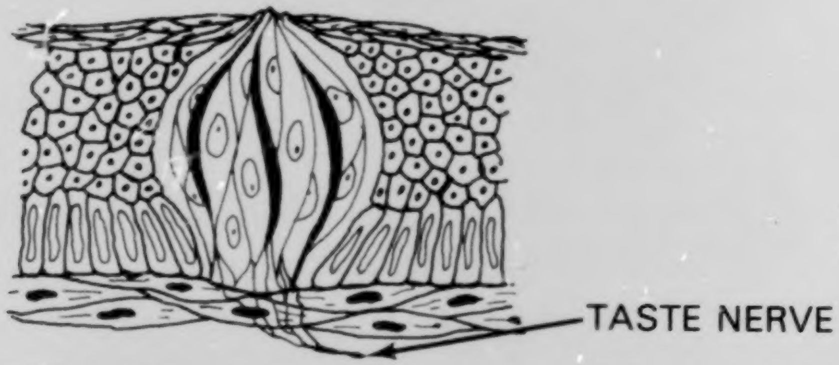
N. I - 511-C

105

The Tongue and Taste


SOUR
BITTER
SALT
SUGAR

Location on the Tongue of the Four Basic Taste Sensations

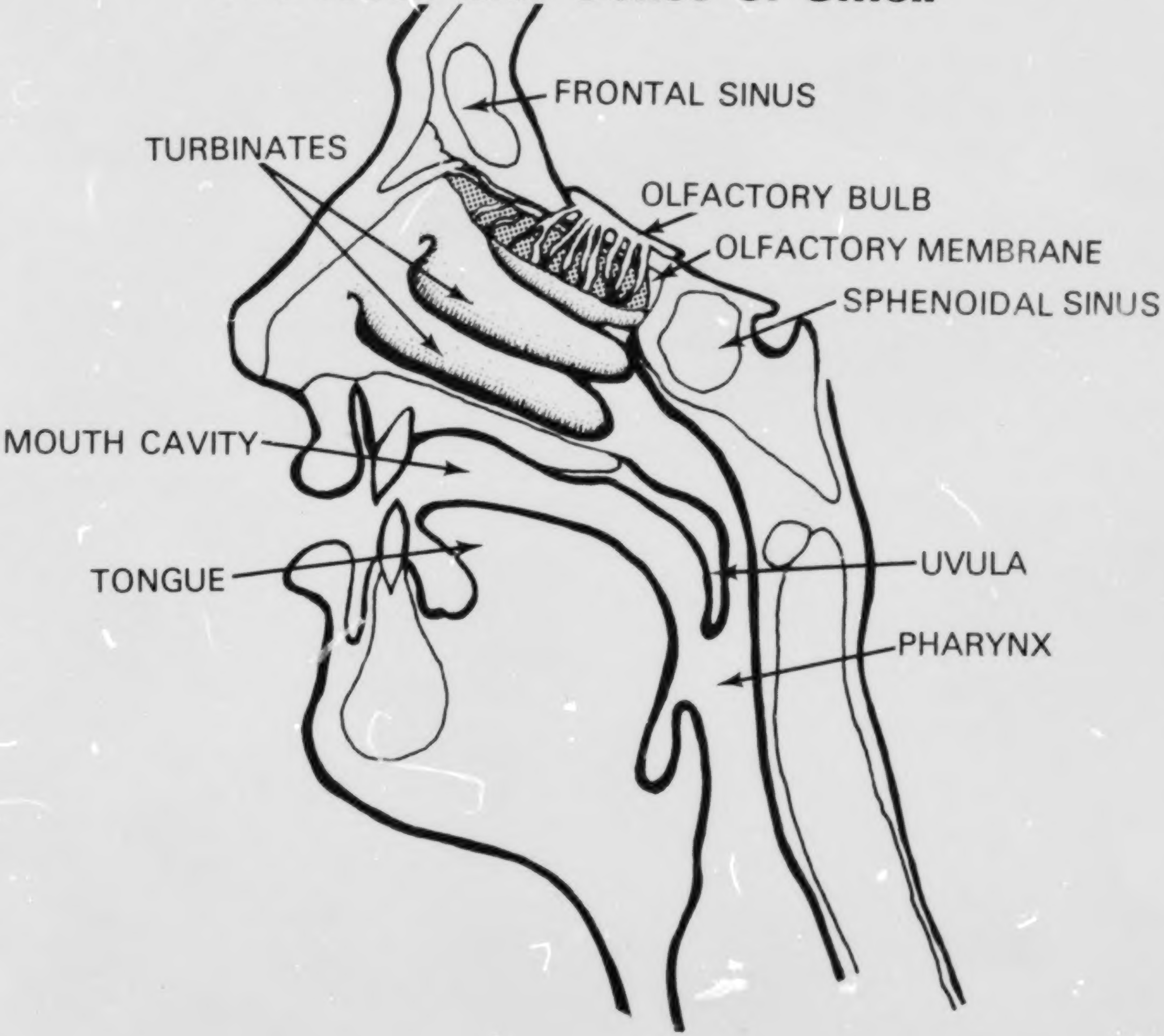

TASTE NERVE

Taste Buds are Special Cells on the Tongue containing Nerve Endings Sensitive to Taste

TM 6

N. I - 513-C

The Nose and Sense of Smell


FRONTAL SINUS
TURBINATES
OLFACTORY BULB
OLFACTORY MEMBRANE
SPHENOIDAL SINUS
MOUTH CAVITY
TONGUE
UVULA
PHARYNX

THE SPECIAL SENSES
UNIT XIV

JOB SHEET #1--MEASURING VISION

I. Equipment needed--Snellen test chart

II. Procedure

(NOTE: The power of vision is usually measured by having the individual read the Snellen test chart. Lines of letters of varying size are printed on the chart and beside each line is given the distance at which it can be read by persons having normal vision.)

A. Have person being tested sit 6 meters (20 feet) from the Snellen chart with eyes at level of 20-foot line on chart

B. Cover one eye with disposable card or cup

C. Have him read the letters as far as he is able with the uncovered eye, beginning with an upper line and reading down

(NOTE: If he can read the line marked for vision at twenty feet, he has 20/20 vision. If he is only able to read the line that can be read by the normal eye at one hundred feet, his vision for that eye is 20/100. If he can read the line that the normal eye can read at fifteen feet, his vision is better than normal, 20/15.)

D. Determine the subject's vision for each eye separately

E. Check for the following possible conditions

1. Emmetropia--Normal vision; objects beyond twenty feet form sharp images on the retina
2. Myopia--Near-sightedness; objects at or beyond twenty feet form sharp images in front of the retina
3. Hyperopia--Far-sightedness; objects at twenty feet form sharp images behind the retina
4. Astigmatism--Visual defect in the shape of the eyeball or lens so that light rays are focused unequally in the two eyes
5. Strabismus--Cross-eye; occurs when the muscles of the eyes do not coordinate so that the eyes do not work together

THE SPECIAL SENSES
UNIT XIV

JOB SHEET #2--TESTING HEARING

I. Equipment needed--Pocket watch or stop watch

II. Procedure

A. Have subject close his eyes and cover one ear with his hand

B. Hold the watch close to the uncovered ear

C. Gradually move away

D. Note the distance at which the watch is no longer heard

E. Wait a few seconds

F. Hold watch at a point farther from subject

G. Gradually move toward the uncovered ear

H. Note the distance at which the watch is heard

I. Record your findings

J. Give a possible explanation for differences noted

K. Repeat for other ear

THE SPECIAL SENSES
UNIT XIV

TEST

1. Match the terms on the right to the correct definition.

______a. Study of the eye and its diseases

______b. Adjustment by the lens to make a sharp, clear image on the retina

______c. Study of the ear and its diseases

______d. Pertaining to sense of smell

______e. General faculty by which conditions outside or inside the body are perceived

______f. Receptors of taste found in the tongue

______g. Bony cavity in which the eye is located

______h. Normal oriented state of the body in respect to its environment

______i. Angle at either end of the slit between the eyelids

______j. Pertaining to the sense of hearing

______k. Opening in the iris which permits the light to enter

______l. Stirrup-shaped bone of middle ear

______m. Saclike mucous membrane which helps keep the eye moist

______n. Anvil-shaped bone of middle ear

1. Iris
2. Ophthalmologist
3. Extrinsic
4. Cerumen
5. Incus
6. Auditory
7. Taste buds
8. Accommodation
9. Ophthalmology
10. Sense
11. Canthus
12. Conjunctiva
13. Sclera
14. Intrinsic
15. Levator
16. Malleus
17. Stapes
18. Equilibrium
19. Olfactory
20. Pupil
21. Orbit
22. Otology

______o. Doctor who specializes in the treatment of eye disorders

______p. Hammer-shaped bone of the middle ear

______q. White part of the eye

______r. Waxlike, soft, brown secretion found in the external ear canal

______s. Colored part of the eye

______t. Muscle that elevates or raises a part

______u. Within a part

______v. Outside a part

2. Name five of the most important senses.

a.

b.

c.

d.

e.

3. Describe the protection of the eye.

4. Match the eye structures on the right to the correct description.

______a. Controls shape of lens to make sharp, clear image

______b. Clear, transparent part of the sclera on the front of eyeball; lets light through

______c. Holds lens in place

______d. Inner layer of nerve tissue made up in part of rods and cones, special light-sensitive cells; receives visual images

______e. Carries visual impulses from retina to brain

______f. Covers the front of the eyeball; lines the eyelid

______g. Circular muscle; regulates amount of light entering pupil

______h. Jellylike substance filling the eyeball posterior to the lens; maintains shape of eyeball

______i. Circular jellylike suspension; focuses images on retina

______j. Middle vascular layer on lateral and posterior eyeball; supplies oxygen and nutrients

______k. Outer layer of firm, connective tissue; covering of eyeball

______l. Space in front of lens between cornea and iris

______m. Space between iris and lens

1. Optic nerve
2. Choroid
3. Conjunctiva
4. Vitreous humor
5. Sclera
6. Anterior chamber
7. Cornea
8. Retina
9. Ciliary muscle
10. Posterior chamber
11. Lens
12. Iris
13. Suspensory or ciliary ligament

5. Match accessory eye structures to the correct description.

_____a. Controls part of eye muscles

_____b. Lies superior and lateral to eyeball; secretes tears which moisten and cleanse eye and destroy some bacteria

_____c. Levators open and close eyelids

_____d. In upper and lower eyelids at inner canthus; carry tears from eye into nasal cavity

_____e. Carries impulses of pain, touch, and temperature from eye and surrounding parts

_____f. Six ribbonlike muscles which coordinate eye movements

1. Ophthalmic nerve
2. Eyelid muscles
3. Lacrimal ducts
4. Extrinsic eye muscles
5. Oculomotor nerve
6. Lacrimal gland

6. Discuss three factors in caring for the eyes.

a.

b.

c.

7. Match structures of the ears to the correct description.

______a. Catches air vibrations or sounds

______b. Amplify sound waves received from tympanum; transmit waves to inner ear

______c. Control equilibrium

______d. Separates middle and inner ear

______e. Protects middle ear; vibrates when sounds strike it

______f. Contains organ of Corti, the organ for hearing

______g. Permits passage of sound waves from ossicles to inner ear

______h. Guides sound vibrations to tympanum

______i. Controls sense of position.

______j. Lubricates and protects external canal and tympanum

______k. Regulates pressure in middle ear to equal pressure outside tympanum

1. Eustachian tube
2. Tympanum
3. Vestibule
4. External auditory canal
5. Ossicles (malleus, incus, and stapes)
6. Cerumen
7. Semicirular canals
8. Pinna or auricle
9. Cochlea
10. Round window
11. Oval window

8. List three ways to care for the ears.

a.

b.

c.

9. Discuss the sense of taste.

10. Discuss the sense of smell.

11. Demonstrate the ability to:

    a. Measure vision.

    b. Test hearing.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

THE SPECIAL SENSES
UNIT XIV

ANSWERS TO TEST

1. a. 9
   b. 8
   c. 22
   d. 19
   e. 10
   f. 7
   g. 21
   h. 18
   i. 11
   j. 6
   k. 20
   l. 17
   m. 12
   n. 5
   o. 2
   p. 16
   q. 13
   r. 4
   s. 1
   t. 15
   u. 14
   v. 3

2. Any five of the following
   a. Visual--Eye
   b. Hearing--Ear

c. Taste--Tongue receptors

d. Smell--Upper nasal cavity

e. Hunger and thirst--Various internal structures

f. Touch, pressure, heat, cold, and pain--Skin

g. Position and balance--Muscles, joints, and semicircular canals in the ears

3. Description should include:

   a. The eye lies in a bony cavity in the skull cushioned by a layer of fatty tissue

   b. Eyelids, eyelashes, and eyebrows protect eyes from bright light and from foreign bodies such as dust and perspiration

   c. Lacrimal apparatus helps keep eye moist

4. a. 9

   b. 7

   c. 13

   d. 8

   e. 1

   f. 3

   g. 12

   h. 4

   i. 11

   j. 2

   k. 5

   l. 6

   m. 10

5. a. 5

   b. 6

   c. 2

   d. 3

e. 1

f. 4

6. Discussion should include any three of the following

  a. Well-balanced diet of basic four food groups

    1) Eye health--Closely related to general health

    2) Night blindness--Caused by Vitamin A deficiency

  b. Accident prevention

    1) Wear goggles to protect eyes when working with tools or other materials that may cause eye damage

    2) Wear goggles to protect eyes from strong light or glare

    3) Use unbreakable lenses in glasses to prevent eye damage due to breakage

  c. Prevention of eye strain

    1) Use adequate light for work and reading

    2) Use properly fitted glasses

    3) When doing close work, look away periodically to rest eyes

    4) When driving or watching television, shift focus point at intervals to rest eyes

    5) Protect eyes from glare of sun or reflected light

    6) Avoid light pollution

  d. Consultation with ophthalmologist or oculist for persistent eye symptoms

    1) Headache associated with reading or close work

    2) Discharge or hemorrhage

    3) Pain

    4) Difficulty in seeing

    5) Blurred vision

    6) Foreign body embedded in eyeball or eyelid

7. a. 8

  b. 5

c. 7

d. 11

e. 2

f. 9

g. 10

h. 4

i. 3

j. 6

k. 1

8. Any three of the following

a. Prompt medical attention should be given to any abnormal symptom

b. Maintain cleanliness by using washcloth to cleanse pinna and opening of external auditory canal

c. Prevent middle ear infections by prompt attention to sore throats and other respiratory infections

d. Wear protective ear covering when working in noisy environment

e. Accurate testing for hearing ability should be done

f. Blow nose gently with both nostrils open

9. Discussion should include:

a. Taste buds relay impulses to two different nerves which carry the impulses to the brain

b. Taste buds are stimulated only if substance to be tasted is in solution

c. Kinds of taste and location on tongue

1) Sweet--Near the tip

2) Sour--At the sides

3) Salty--Near the tip

4) Bitter--At the back

d. Involves two nerves in relaying impulses to the brain

10. Discussion should include:

    a. Closely related to the sense of taste

    b. Receptors located in the olfactory epithelium in upper part of the nasal cavity

    c. Impulses of smell carried to the brain by the olfactory nerve

    d. Olfactory nerves tire quickly and become less sensitive after detecting the same odor for a period of time

    e. Involves one nerve, the olfactory

11. Performance skills will be evaluated to the satisfaction of the instructor.

THE ENDOCRINE SYSTEM
UNIT XV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to match terms and definitions associated with the endocrine system. The student should be able to list fundamental facts about endocrine glands and general characteristics of hormones. The student should be able to identify the endocrine glands, name hormones and their functions, and list ways to maintain the endocrine system. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the endocrine system to the correct definition.
2. Distinguish between exocrine and endocrine glands.
3. List six fundamental facts about endocrine glands.
4. Identify the endocrine glands on a given diagram.
5. List four general characteristics of hormones.
6. Name the hormones and their functions when given the names of the major glands.
7. List two other organs that secrete hormones.
8. Name one hormone not secreted by an endocrine gland giving the organ from which it is secreted.
9. List four ways of maintaining the endocrine system.
10. Discuss the relationship between the endocrine system and other systems of the body.
11. Write a report concerning one of the hormones.

THE ENDOCRINE SYSTEM
UNIT XV

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Make transparencies.

   D. Discuss terminal and specific objectives.

   E. Discuss information and assignment sheets.

   F. Determine location of references for Assignment Sheet #2.

   G. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Complete each assignment sheet.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1--Endocrine Relationships

      2. TM 2--Endocrine System

   D. Assignment sheets

      1. Assignment Sheet #1--Interrelationship of Body Systems

      2. Assignment Sheet #2--Outside Reading About Hormones

   E. Test

   F. Answers to test

II. References:

   A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

   B. Memmler, Ruth L. and Ruth B. Rada. *The Human Body in Health and Disease.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

   C. Thomas, Virginia E. *Life Sciences for Health Technologies.* Los Angeles, California: Technicourse, Inc., 1970.

   D. von Gremp, Zella and Lucile Broadwell. *Practical Nursing Study Guide and Review.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1965.

III. Additional materials:

   A. Film--"Endocrine Glands," American Medical Association.

   B. Filmstrip--"The Endocrine System," Robert J. Brady Company.

THE ENDOCRINE SYSTEM
UNIT XV

INFORMATION SHEET

I. Terms and definitions

   A. Endocrinology--Study of the endocrine system

   B. Hormone--Internal secretion of a gland or an organ which regulates a body function

   C. Steroid--Organic compound derived from fats

   D. Malfunction--Failure to operate in normal or usual manner

   E. Hypersecretion--Excessive secretion

   F. Hyposecretion--Inadequate secretion

   G. Synergistic relationship--Harmonious action of two hormones producing a response greater than the total effect of each operating by itself

   H. Permissive relationship--Presence of one hormone is essential for the action of another

   I. Inhibitory relationship--Interaction of two or more hormones to maintain a constant level of activity

   J. Diabetes insipidus--Metabolic disorder characterized by intense thirst and excretion of large amounts of urine

   K. Diabetes mellitus--Disorder of carbohydrate metabolism characterized by hyperglycemia and glycosuria

   L. Tetany--Disturbed calcium metabolism resulting in intermittent muscle spasm of the extremities

   (NOTE: Tetany must not be confused with tetanus which is an acute infectious disease producing a toxin which causes persistent spasm of the voluntary muscles.)

II. Glands

   A. Exocrine

      1. Those whose secretions reach an epithelial surface either directly or through a duct

INFORMATION SHEET

2. Glands of external secretion

   Examples: Sweat glands which secrete externally to the surface or outside of the body; glands that secrete digestive juices into the digestive tract which in turn leads outside the body

B. Endocrine

   1. Those whose secretions are absorbed directly into the blood which then transports them throughout the body

   2. Ductless glands or glands of internal secretion

      Example: Thyroid gland secretes thyroxin directly into the bloodstream.

III. Fundamental facts about endocrine glands

   A. Located in widely separated parts of the body

   B. Closely related to the nervous system in regulatory action

      (NOTE: The differences in regulatory action between the nervous system and the endocrine system are in the speed and duration of response. Nerve action usually occurs in a fraction of a second and lasts only as long as the stimulation is present. Endocrine action is slower and is a more prolonged stimulation and regulation.)

   C. Well supplied with blood; often present a bleeding problem in surgery

   D. Actions interrelated; hormones from one gland act upon another gland (Transparency 1)

   E. Composed of epithelial and connective tissue

   F. Aid in maintaining homeostasis

   G. Malfunction may result from hypersecretion or hyposecretion

   H. Closely dependent upon the circulatory system

      (NOTE: Research is being conducted to learn more about their functions.)

IV. Endocrine glands (Transparency 2)

   A. Pineal body

   B. Pituitary or hypophysis

INFORMATION SHEET

- C. Parathyroids
- D. Thyroid
- E. Thymus
- F. Adrenals or suprarenals
- G. Pancreas (islands of Langerhans)
- H. Ovaries
- I. Testes

V. General characteristics of hormones

- A. Each has a specific function
- B. Amount of hormone circulating in the blood remains nearly constant

  (NOTE: The rate of production is influenced by the rate of use and destruction of the hormone.)
- C. Concentration of one hormone may influence concentration of other hormones
- D. Hormones have a profound effect upon growth, development, and personality of an individual
- E. Most hormones are steroids or proteins
- F. Hormones may have a synergistic, permissive, or inhibitory relationship

VI. Major endocrine glands, their hormones and functions

	Gland	Hormone	Function
A.	Pituitary	Many	Control other glands; stimulate growth
B.	Thyroid	Thyroxin	Controls rate of metabolism
C.	Parathyroid	Parathyroid hormone	Regulates calcium and phosphorous metabolism
D.	Pancreas	Insulin from islands of Langerhans	Essential for utilization of glucose
E.	Ovaries	Estrogen and progesterone	Development and maintenance of female reproductive organs

INFORMATION SHEET

F.	Testes	Testosterone	Development and maintenance of male reproductive organs
G.	Adrenal		
	1. Medulla	Adrenalin	Prepares body for fight or flight
	2. Cortex	Corticoids	Aids body in coping with stress or infection

VII. Other organs that secrete hormones

A. Placenta

(NOTE: It produces hormones during pregnancy.)

B. Thymus

(NOTE: It produces a hormone that stimulates production of lymphocytes by the lymph glands. Thymus reaches its greatest size when a child reaches about six years of age then it gradually diminishes in size.)

C. Pineal body

(NOTE: The function is debated. It may secrete a hormone, melatonin, which inhibits ovarian function.)

VIII. Hormones not secreted by endocrine glands

A. Gastrin--Secreted by the stomach wall

(NOTE: It stimulates the secretions of the gastric glands.)

B. Secretin--Secreted by the small intestine

(NOTE: It stimulates pancreatic juices.)

C. Villikinin--Secreted by the small intestine

(NOTE: It stimulates movements of the intestinal villi.)

IX. Maintaining the endocrine system

A. Adequate intake of iodine for manufacture of thyroxin

(NOTE: Iodine is available naturally in some foods, water, or in iodized salt.)

INFORMATION SHEET

B. Well-balanced diet

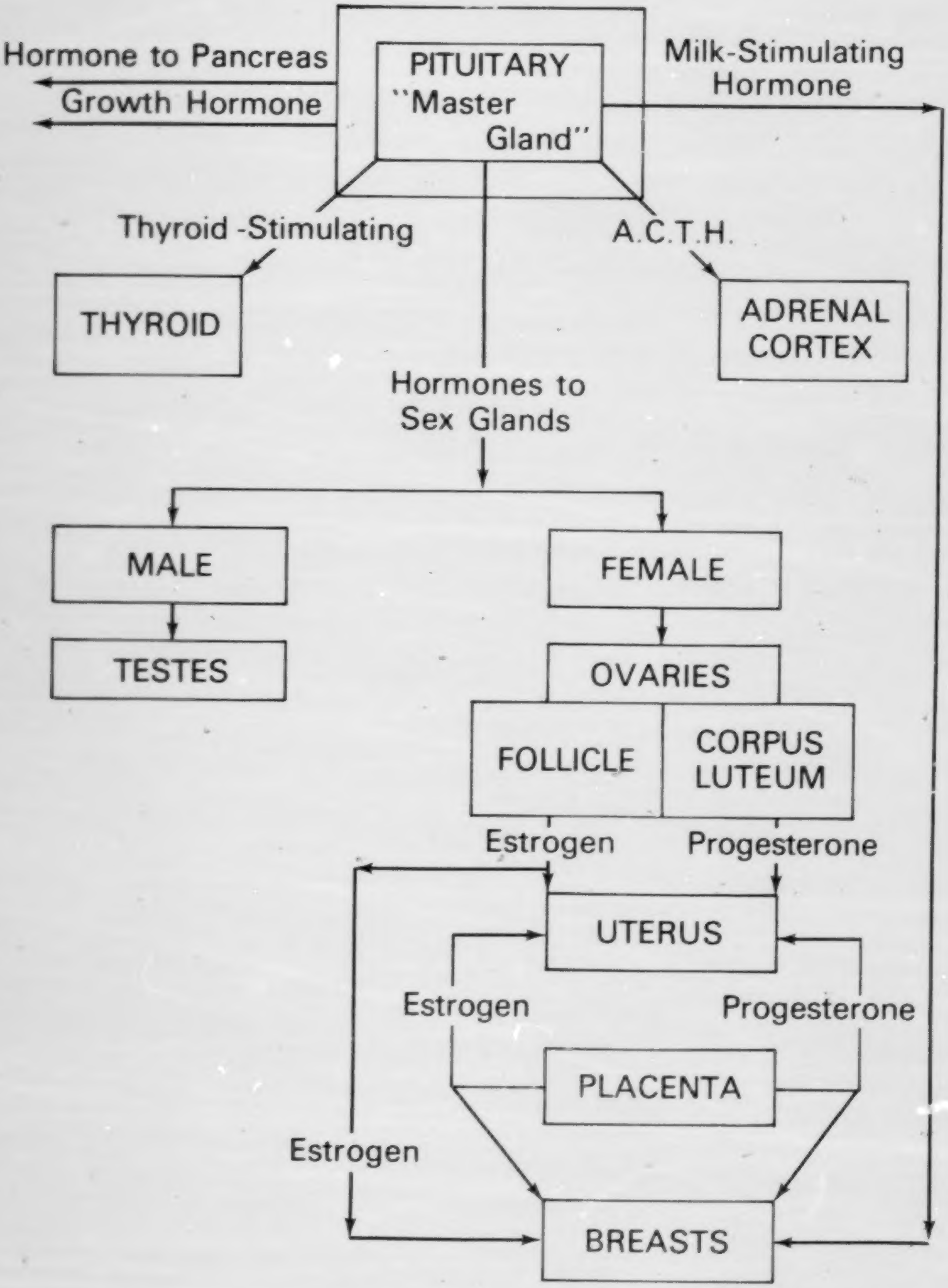
C. Control of weight

D. Regular physical examination

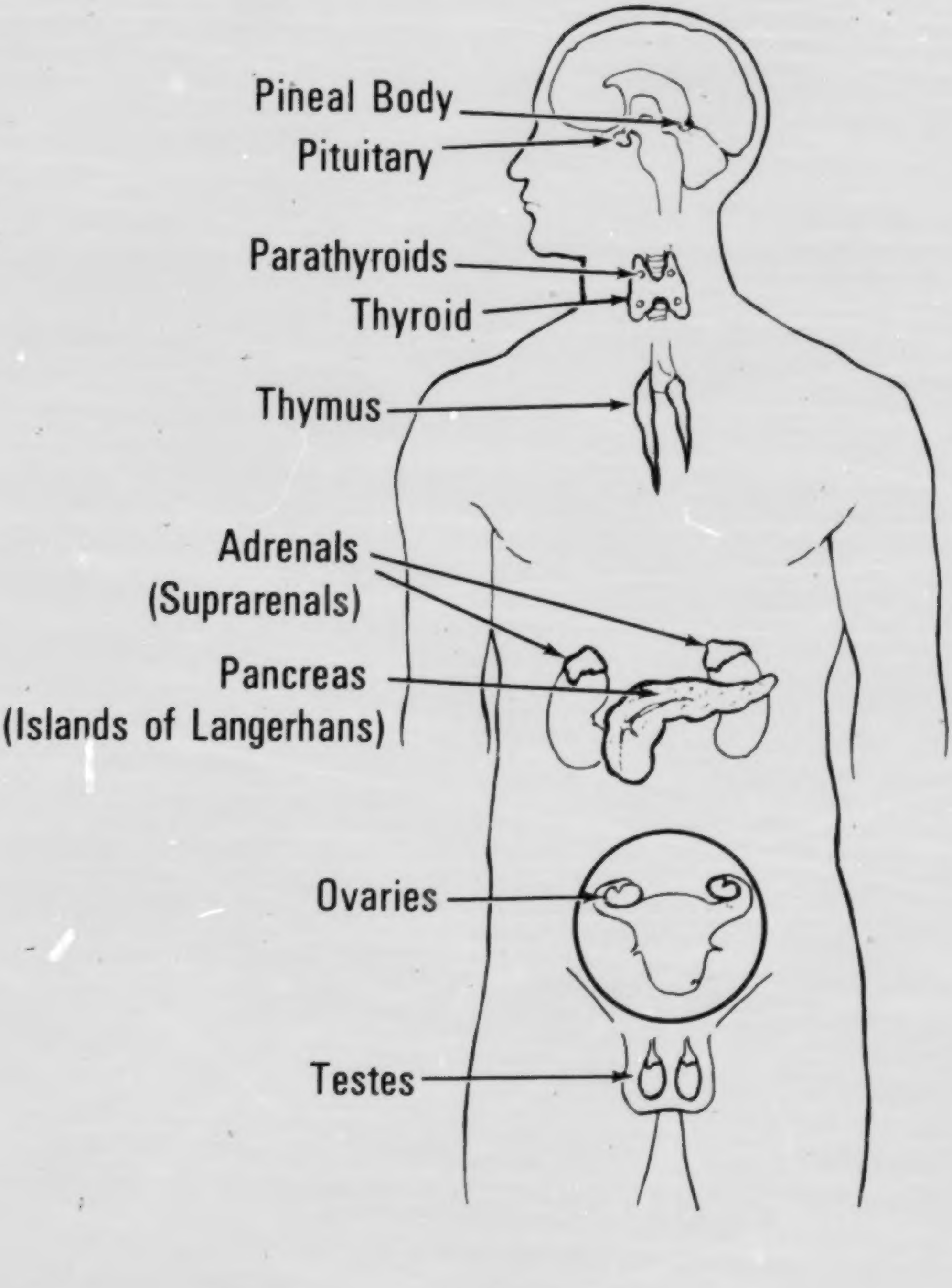
E. Observation for symptoms of endocrine malfunction

N. I - 543-C

Endocrine Relationships


Hormone to Pancreas
Growth Hormone
PITUITARY "Master Gland"
Milk-Stimulating Hormone
Thyroid -Stimulating
A.C.T.H.
THYROID
ADRENAL CORTEX
Hormones to Sex Glands
MALE
FEMALE
TESTES
OVARIES
FOLLICLE
CORPUS LUTEUM
Estrogen
Progesterone
UTERUS
Estrogen
Progesterone
PLACENTA
Estrogen
BREASTS

Endocrine System


Pineal Body
Pituitary
Parathyroids
Thyroid
Thymus
Adrenals
(Suprarenals)
Pancreas
(Islands of Langerhans)
Ovaries
Testes

THE ENDOCRINE SYSTEM
UNIT XV

ASSIGNMENT SHEET #1--INTERRELATIONSHIP OF BODY SYSTEMS

1. Discuss the relationship between the endocrine system and other systems of the body.

    A. Nervous system

    B. Circulatory system

    C. Digestive system

    D. Reproductive system

THE ENDOCRINE SYSTEM
UNIT XV

ASSIGNMENT SHEET #2--OUTSIDE READING ABOUT HORMONES

1. Write a brief report about one of the hormones, giving information you have learned since studying this unit. Give a source for your information, such as an article from a recent publication or from reading in a reference text.

THE ENDOCRINE SYSTEM
UNIT XV

TEST

1. Match the terms on the right to the correct definition.

______a. Study of the endocrine system

______b. Internal secretion of a gland or an organ which regulates a body function

______c. Organic compound derived from fats

______d. Failure to operate in normal or usual manner

______e. Excessive secretion

______f. Inadequate secretion

______g. Disorder of carbohydrate metabolism characterized by hyperglycemia and glycosuria

______h. Harmonious action of two hormones producing a response greater than the total effect of each operating by itself

______i. Disturbed calcium metabolism resulting in intermittent muscle spasms of the extremities

______j. Presence of one hormone is essential for the action of another

______k. Metabolic disorder characterized by intense thirst and excretion of large amounts of urine

______l. Interaction of two or more hormones to maintain a constant level of activity

1. Tetany
2. Permissive relationship
3. Hyposecretion
4. Malfunction
5. Hormone
6. Diabetes insipidus
7. Diabetes mellitus
8. Endocrinology
9. Steroid
10. Hypersecretion
11. Synergistic relationship
12. Inhibitory relationship

2. Distinguish between exocrine and endocrine glands by placing an "X" to the left of those indicating exocrine glands.

   ______a. Glands of internal secretion

   ______b. Glands of external secretion

   ______c. Those whose secretions reach an epithelial surface either directly or through a duct

   ______d. Those whose secretions are absorbed directly into the blood which then transports them throughout the body

3. List six fundamental facts about endocrine glands.

   a.

   b.

   c.

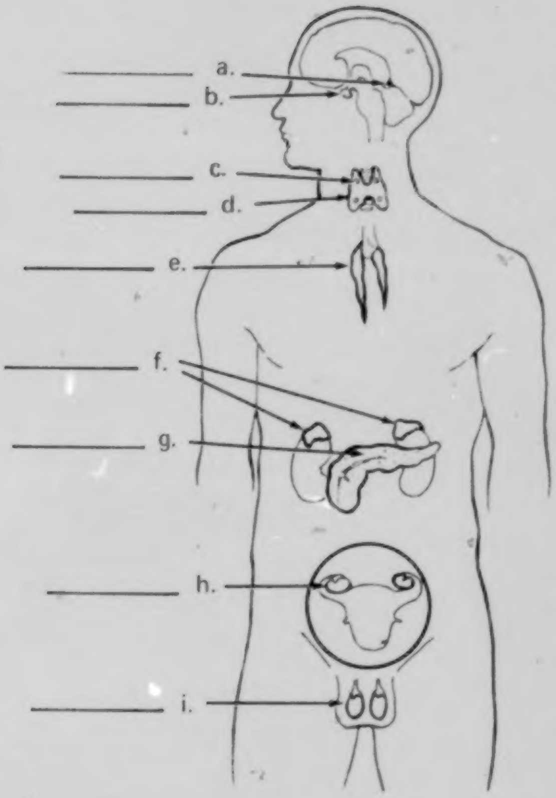
   d.

   e.

   f.

4. Identify the endocrine glands by placing the correct number in the blanks.

1. Thymus
2. Pancreas
3. Testes
4. Ovaries
5. Pineal body
6. Thyroid
7. Parathyroids
8. Pituitary or hypophysis
9. Adrenals or suprarenals



5. List four general characteristics of hormones.
   - a.
   - b.
   - c.
   - d.

6. Name the hormones and their functions for these major glands.
   - a. Adrenal
     - 1) Medulla
     - 2) Cortex
   - b. Pancreas
   - c. Testes
   - d. Thyroid
   - e. Pituitary
   - f. Ovaries
   - g. Parathyroid

7. List two other organs that secrete hormones.
   - a.
   - b.

8. Name one hormone not secreted by an endocrine gland giving the organ from which it is secreted.

9. List four ways of maintaining the endocrine system.
   - a.
   - b.
   - c.
   - d.

10. Discuss the relationship between the endocrine system and other systems of the body.

    (NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

11. Write a report concerning one of the hormones.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

THE ENDOCRINE SYSTEM
UNIT XV

ANSWERS TO TEST

1. a. 8
   b. 5
   c. 9
   d. 4
   e. 10
   f. 3
   g. 7
   h. 11
   i. 1
   j. 2
   k. 6
   l. 12
2. b, c
3. Any six of the following
   a. Located in widely separated parts of the body
   b. Closely related to the nervous system in regulatory action
   c. Well supplied with blood; often present a bleeding problem in surgery
   d. Actions interrelated; hormones from one gland act upon another gland
   e. Composed of epithelial and connective tissue
   f. Aid in maintaining homeostasis
   g. Malfunction may result from hypersecretion or hyposecretion
   h. Closely dependent upon the circulatory system
4. a. 5

b. 8

c. 7

d. 6

e. 1

f. 9

g. 2

h. 4

i. 3

5. Any four of the following

a. Each has a specific function

b. Amount of hormone circulating in the blood remains nearly constant

c. Concentration of one hormone may influence concentration of other hormones

d. Hormones have a profound effect upon growth, development, and personality of an individual

e. Most hormones are steroids or proteins

f. Hormones may have a synergistic, permissive, or inhibitory relationship

6.	a.	1) Adrenalin	Prepares body for fight or flight
		2) Corticoids	Aids body in coping with stress or infection
	b.	Insulin from islands of Langerhans	Essential for utilization of glucose
	c.	Testosterone	Development and maintenance of male reproductive organs
	d.	Thyroxin	Controls rate of metabolism
	e.	Many	Control other glands; stimulate growth
	f.	Estrogen and progesterone	Development and maintenance of female reproductive organs
	g.	Parathyroid hormone	Regulates calcium and phosphorous metabolism

7. Any two of the following
    a. Placenta
    b. Thymus
    c. Pineal body
8. Any one of the following
    a. Gastrin--Secreted by the stomach wall
    b. Secretin--Secreted by the small intestine
    c. Villikinin--Secreted by the small intestine
9. Any four of the following
    a. Adequate intake of iodine for manufacture of thyroxin
    b. Well-balanced diet
    c. Control of weight
    d. Regular physical examination
    e. Observation for symptoms of endocrine malfunction
10. Evaluated to the satisfaction of the instructor.
11. Evaluated to the satisfaction of the instructor.

THE REPRODUCTIVE SYSTEM
UNIT XVI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to identify the parts of the reproductive systems and to list their locations and functions. The student should be able to describe the menstrual cycle and the mammary glands and their function. The student should be able to list ways to maintain the reproductive systems. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the reproductive system to the correct definition.
2. List three functions of the reproductive system.
3. List three fundamental facts about the reproductive system.
4. Identify the parts and adjacent structures of the male reproductive system on a given diagram.
5. List the location and functions of the male external organs.
6. List the location and functions of the male internal organs.
7. List four secondary sex characteristics in males and the approximate age at which they appear.
8. Identify the parts and adjacent structures of the female reproductive system on a given diagram.
9. List the location and functions of the female external organs.
10. List the location and functions of the female internal organs.
11. Describe the parts and structure of the uterus.
12. List four secondary sex characteristics in females and the approximate age at which they appear.
13. Describe the menstrual cycle.
14. Discuss menopause.
15. Describe the mammary glands giving their function.
16. List four ways to maintain the health of the male reproductive system.
17. List six ways to maintain the health of the female reproductive system.

THE REPRODUCTIVE SYSTEM
UNIT XVI

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.
   B. Provide students with information and assignment sheets.
   C. Make transparencies.
   D. Discuss terminal and specific objectives.
   E. Discuss information sheets.
   F. Assist students in completing assignment sheets.
   G. Give test.

II. Student:

   A. Read objectives.
   B. Study information sheet.
   C. Participate in discussion.
   D. Complete assignment sheets.
   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives
   B. Information sheet
   C. Transparency masters
      1. TM 1--Ovum and Sperm
      2. TM 2--Male Reproductive System
      3. TM 3--Female Reproductive System: External Organs
      4. TM 4--Female Reproductive System: Internal Organs
      5. TM 5--Female Reproductive System: Uterus and Fallopian Tubes
      6. TM 6--The Breast
      7. TM 7--The Menstrual Cycle

D. Assignment sheets

1. Assignment Sheet #1--Identifying the Reproductive Organs

2. Assignment Sheet #2--Menstruation and Menopause

E. Test

F. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Memmler, Ruth L. and Ruth B. Rada. *The Human Body in Health and Disease.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. von Gremp, Zella and Lucile Broadwell. *Practical Nursing Study Guide and Review.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1965.

III. Films:

A. "As Boys Grow." Oklahoma State Department of Health.

B. "Female Cycle."* Films Incorporated, 733 Greenbay Road, Wilmette, Illinois 60091.

C. "It's Wonderful Being a Girl." Oklahoma State Department of Health.

D. "Puberty in Boys."* Films Incorporated, 733 Greenbay Road, Wilmette, Illinois 60091.

E. "The Story of Menstruation." Oklahoma State Department of Health.

F. "Especially for Boys." Oklahoma State Department of Health.

G. "The Human Body: Reproductive System." Oklahoma State Department of Health.

H. "Menstrual Education Aid: The Female Cycle." G. D. Searle and Company.

(*NOTE: Also available from Oklahoma State Department of Vocational Technical Education, Curriculum and Instructional Materials Center, 1515 West Sixth Avenue, Stillwater, Oklahoma 74074.

IV. Filmstrip--"The Obsolete Menopause." Upjohn Professional Film Library.

THE REPRODUCTIVE SYSTEM
UNIT XVI

INFORMATION SHEET

I. Terms and definitions

   A. Gynecology--Study of the diseases of the female reproductive system

   B. Semen--Thick, whitish secretion of the reproductive glands in the male

   C. Puberty--Period at which one becomes capable of reproduction

   D. Scrotum--External pouch which contains the testes

   E. Sperm--Male reproductive cell (Transparency 1)

   F. Ovum--Female reproductive cell (Transparency 1)

   G. Copulation--Sexual intercourse

   H. Viscid--Glutinous; sticky

   I. Pubic--Pertaining to the os pubis, the anterior bone of the pelvis

   J. Axillary--Pertaining to the axilla or armpit

   K. Vulva--External female genitalia

   L. Perineum--Area between external genitalia and the anus

   M. Broad ligament--Fold of the peritoneum that supports the uterus

   N. Menarche--Beginning of menstruation

   O. Graafian follicle--Thin-walled cavity in the ovary enclosing a developing ovum

   P. Menopause--Permanent cessation of menstrual activity

   Q. Spermatic cord--Cord suspending the testes composed of veins, arteries, lymphatics, nerves, and vas deferens

   R. Glans penis--Bulbous end of the penis

   S. Prepuce--Fold of skin over the glans penis

INFORMATION SHEET

T. Circumcision--Surgical removal of the prepuce

U. Lactiferous ducts--Milk conveying ducts

V. Mammary glands--Milk secreting glands of the breast

W. Menstruation--Periodic discharge of blood and tissues from the nonpregnant uterus

X. Viable--Capable of maintaining an independent existence

Y. Climacteric--That period that marks the cessation of the reproductive function in the female or diminishing testicular activity in the male

Z. Fertilization--Process by which the male's sperm unites with the female's ovum

AA. Reproduction--Process by which a living organism produces a new individual of the same kind

II. Functions of the reproductive system

A. Perpetuation of the human species

B. Sexual gratification

C. Secretion of hormones

III. Fundamental facts about the reproductive system

A. Closely related to the urinary system

1. In the males, the same tract, urethra, is used to discharge semen, sperm, and urine

2. In females, reproductive and urinary systems are adjacent

B. Human beings are born with full complement of reproductive organs which grow slowly until puberty

C. Secondary sex characteristics are dependent upon hormones secreted by the gonads

D. At puberty, the gonads gradually become functional and secondary sexual characteristics begin to develop

E. A sperm and an ovum each have twenty-three chromosomes; their union provides the twenty-three pairs of chromosomes for the new individual

INFORMATION SHEET

IV. Male reproductive system and adjacent structures (Transparency 2)

- A. Testis or testicle (2)

  (NOTE: The plural is testes or testicles.)
- B. Scrotum
- C. Epididymis (2)

  (NOTE: The plural is epididymides.)
- D. Vas deferens

  (NOTE: This is also called ductus deferens.)
- E. Ejaculatory duct (2)
- F. Urethra
- G. Prostate gland
- H. Seminal vesicle (2)
- I. Bulbourethral glands (2)
- J. Penis
- K. Glans penis
- L. Prepuce
- M. Urinary bladder
- N. Rectum
- O. Pubic bone
- P. Kidney
- Q. Ureter

V. Location and functions of male external organs (Transparency 2)

ORGAN	LOCATION	FUNCTION
A. Scrotum	Posterior to penis	Protects testes Regulates and maintains favorable temperature for sperm production
B. Testes	In scrotum	Produce sperm Produce testosterone

INFORMATION SHEET

C.	Epididymis	On top and behind each testis	Collects sperm Stores sperm while maturing Conducts sperm to outside
D.	Vas deferens	From testis through lower abdomen to urethra	Transports sperm from the testes to the urethra
E.	Penis and urethra	Suspended from front and sides of pubic arch	Carries semen into vagina during copulation Carries urine from bladder

VI. Location and functions of male internal organs (Transparency 2)

	ORGAN	LOCATION	FUNCTION
A.	Seminal vesicles	Directly behind the urinary bladder	Contribute essential components to semen
B.	Prostate gland	Below urinary bladder, surrounding the first part of the urethra	Secretes alkaline fluids which enhance sperm mobility Contracts smooth muscles to aid ejaculation
C.	Bulbourethral glands or Cowper's glands	On each side of urethra	Secrete alkaline viscid fluid which removes urine residue Secrete mucus for lubrication
D.	Vas deferens	From testes through lower abdomen to urethra	Transports sperm from testes to urethra

VII. Secondary sex characteristics in males

A. Appear at puberty, approximately twelve to fourteen years of age

B. Development of firmer musculature

C. Increased activity of sudoriferous and sebaceous glands

D. Growth of beard, pubic, and axillary hair with general increase of hair growth all over the body

INFORMATION SHEET

E. Change in body form with broader shoulders, narrow hips

F. Change in voice to deeper tones

VIII. Female reproductive system and adjacent structures

A. External organs (Transparency 3)

1. Mons pubis
2. Clitoris
3. Meatus of urethra
4. Labia majora
5. Labia minora
6. Vaginal orifice
7. Hymen
8. Vestibule
9. Perineum
10. Anus

B. Internal organs (Transparencies 4 and 5)

1. Uterus
2. Fallopian tube (2)
3. Ovary (2)
4. Pubic bone
5. Cervix
6. Endometrium
7. Vagina
8. Urinary bladder
9. Urethra
10. Meatus of urethra
11. Vaginal orifice

INFORMATION SHEET

12. Rectum
13. Labia minora
14. Labia majora

C. Breast (Transparency 6)

1. Nipple
2. Areola
3. Lactiferous ducts
4. Lobe of gland tissue
5. Adipose tissue
6. Pectoralis major
7. Ribs

IX. Location and function of female external organs and adjacent structures (Transparency 3)

	ORGAN	LOCATION	FUNCTION
A.	Mons pubis	Skin-covered pad of fat over the symphysis pubis	Protection of pubic bone
B.	Labia majora	From mons pubis downward toward perineum	Surround labia minora
C.	Labia minora	Two thinner folds inside the labia majora	Enclose the vestibule
D.	Clitoris	At the anterior junction of labia majora and labia minora	Sexual excitation
E.	Urethral orifice	Between clitoris and vaginal orifice	Regulates flow of urine
F.	Vaginal orifice	Between labia minora	Opening to vagina
G.	Bartholin's glands and Skene's glands	Near vaginal orifice	Secretion of lubricating fluids
H.	Perineum	Between vaginal orifice and anus	Pelvic floor

(NOTE: The term perineum is clinically used to mean the area between the vaginal orifice and the anus. The full use of the term, however, includes all structures between the mons pubis and the coccyx.)

I.	Anus	Posterior to perineum	Outlet of alimentary tract

INFORMATION SHEET

X. Location and function of female internal organs (Transparencies 4 and 5)

	ORGAN	LOCATION	FUNCTION
A.	Vagina	Canal from uterus to external vaginal orifice	Passageway for infant during birth Reception of the male penis during copulation
B.	Uterus	Hollow muscular organ in the center of pelvic cavity, posterior to bladder	Reception, protection, and nourishment of fertilized ovum until a viable infant Menstruation
C.	Fallopian tubes (2)	One attached to each side of the uterus	Movement of ova from ovaries to uterus Fertilization takes place
D.	Ovaries (2)	In pelvic part of the abdomen	Production of hormones and an ovum, usually once per month from alternate ovary

XI. Parts and structures of the uterus

- A. Pear-shaped organ divided into three parts
  - 1. Body--Broader, upper portion

    (NOTE: This is also called the corpus uteri.)
  - 2. Cervix--Lower, necklike portion
  - 3. Fundus--Small rounded part above the orifices of the fallopian tubes
- B. Lined with specialized epithelium called endometrium
- C. Suspended and held in place by the broad ligaments

XII. Secondary sex characteristics in female

- A. Appear at puberty, approximately ten to twelve years of age

  (NOTE: Onset of puberty in both boys and girls varies considerably.)
- B. Enlargement of the breasts
- C. Appearance of pubic and axillary hair
- D. Menarche
- E. Changes of body contours due to increase in growth and fatty deposits

INFORMATION SHEET

F. Generally mature earlier than males

G. Increased activity of sudoriferous and sebaceous glands

XIII. Menstrual cycle (Transparency 7)

A. Usually twenty-eight days in length

B. Usually on the first day of menstruation one of the many ova enclosed in a graafian follicle begins to mature

C. By the fourteenth day of the cycle the graafian follicle ruptures; ovum is released into the abdominal cavity

(NOTE: During this period of ovum maturation, the graafian follicle has been producing estrogen under the control of the pituitary gland.)

D. Fringed end of fallopian tube sweeps the ovum into the tube where it is slowly propelled by the cilia of the lining to the uterus

E. Fertilization occurs midway through the tube when the ovum is penetrated by a sperm

F. Ruptured graafian follicle fills with a golden-colored substance and becomes a corpus luteum secreting increased amounts of progesterone and estrogens; increased production of hormone causes the endometrium to become greatly thickened and vascular

G. If fertilization does not occur, the corpus luteum and its secretions diminish, the blood supply to the endometrium decreases, and the uterine capillaries begin to bleed and endometrium sloughs off

H. Menstrual flow occurs, consisting of blood, mucus, and cast off cells

XIV. Menopause

A. Menstrual cycles continue as long as ovarian hormones stimulate the endometrium

B. Between the ages of forty-two and fifty-four, average age forty-eight, production of ova ceases

C. Ovaries become chiefly scar tissue and production of estrogens diminishes

D. Lack of estrogens causes atrophy of the uterus, fallopian tubes, the vagina, and the vulva

INFORMATION SHEET

E. Menopause is a normal condition

(NOTE: It may produce some temporary disturbing effects such as irritability, "hot flashes," extreme excitability, or other minor disturbances of the nervous and digestive systems. As a rule the better a woman's state of health, the less traumatic this period will be.)

XV. Mammary glands and lactation (Transparency 6)

A. Accessory glands of the female reproductive system

B. Function--Lactation

C. Modified sweat glands composed of a number of lobes subdivided into lobules

D. Secretions from the lobules conveyed through the lactiferous ducts to the nipple

E. Begin development at puberty but not functional until the end of a pregnancy

F. Nipple surrounded by the areola, which changes from pink to brown during pregnancy

XVI. Maintaining the health of the male reproductive system

A. Adequate diet for health of all body systems

B. Daily bath with special attention to external genitalia

C. Circumcision if necessary to facilitate cleanliness of the glans penis

D. Regular physical examination should include examination of the prostate for evidence of tumor or enlargement beginning at age forty

E. Prompt attention and treatment for infections of the genitourinary tract

F. Prevention of genitourinary infections by

1. Avoiding sexual intercourse with infected persons
2. Use of clean and sanitary toilet facilities
3. Avoiding wearing another person's clothing

INFORMATION SHEET

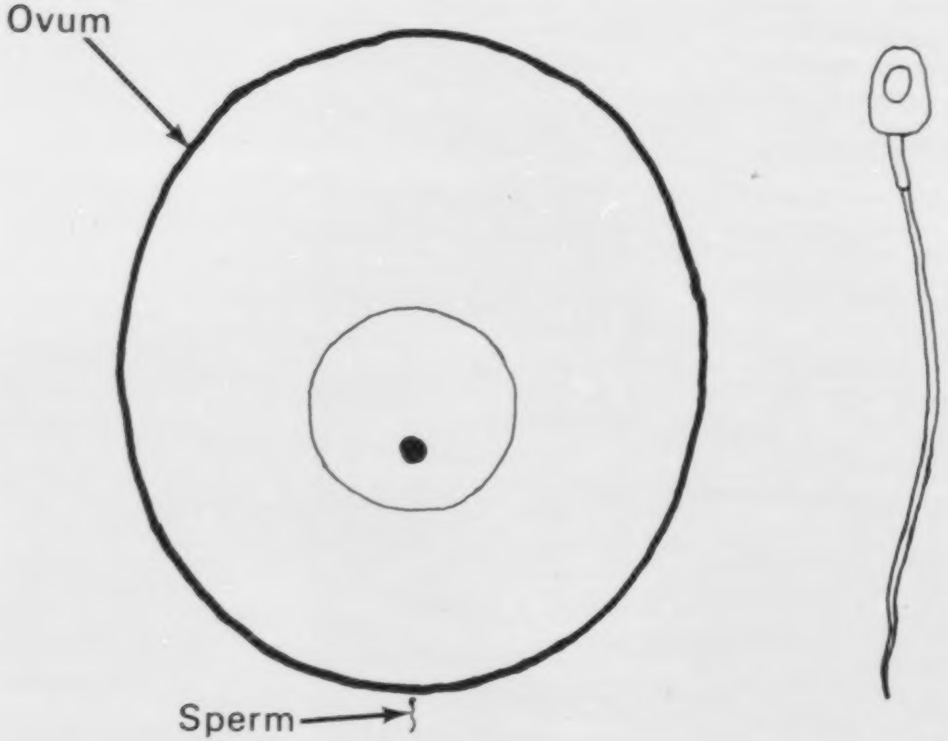
XVII. Maintaining the health of the female reproductive system

- A. Daily bathing with particular attention to the vulva
- B. Prevention of genitourinary infections by
  - 1. Avoiding sexual intercourse with infected persons
  - 2. Use of clean and sanitary toilet facilities
  - 3. Avoiding wearing another person's clothing
  - 4. Cleaning anus by wiping posteriorly away from vaginal orifice
- C. Adequate diet to maintain all body systems
- D. Breast self-examination for nodules at monthly intervals

  (NOTE: This should be done following menses.)
- E. Annual physical examination including Papanicolaou's smear, PAP smear

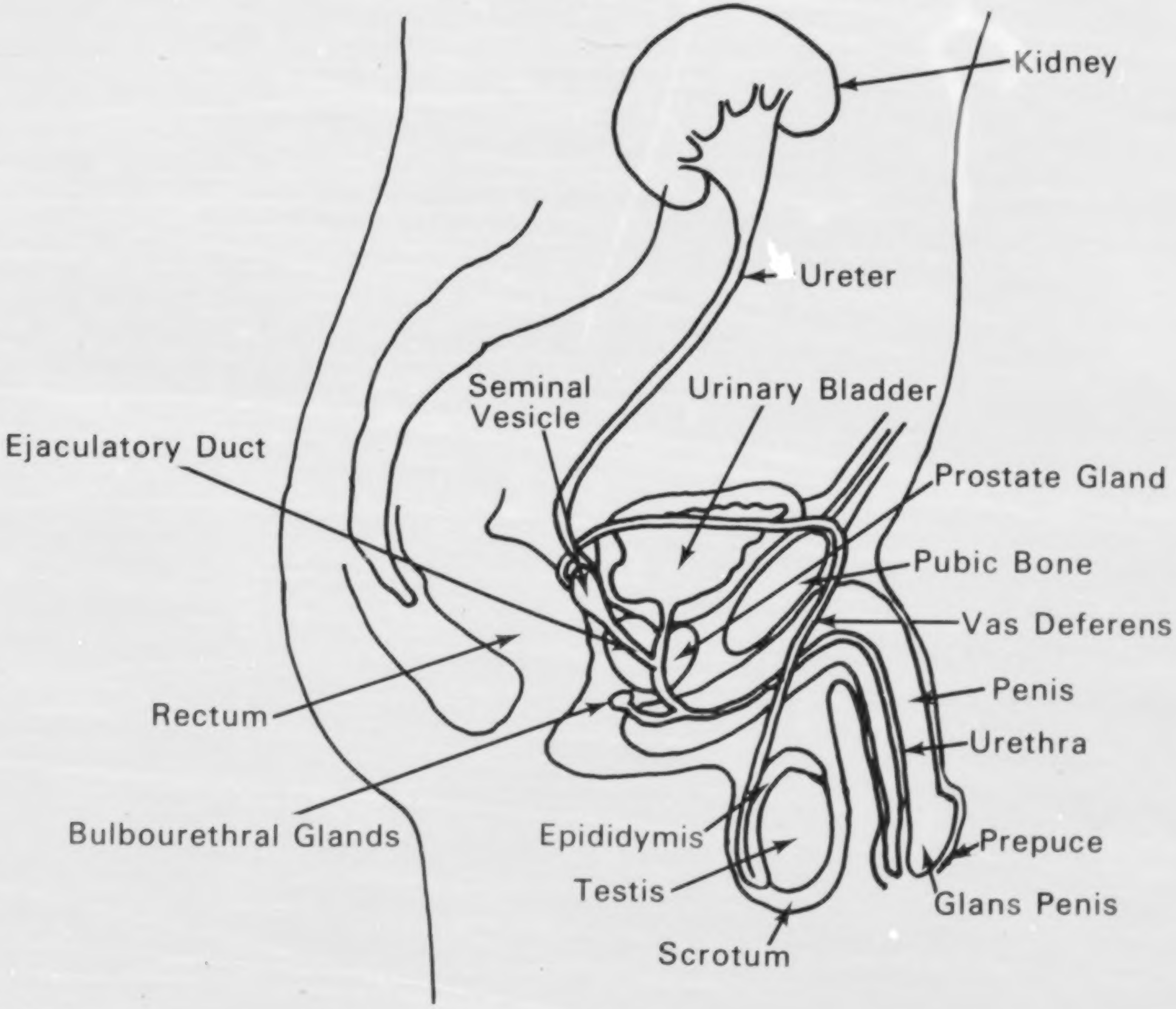
  (NOTE: After age forty the PAP smear is generally recommended every six months.)
- F. Immediate medical attention for
  - 1. Unusual vaginal discharge, including bloody spotting
  - 2. Irritation of external genitalia
  - 3. Marked change in menstrual cycle
  - 4. Excessive discomfort related to menses or menopause
- G. Cultivate good mental health habits
- H. Adequate exercise and rest
- I. During menstrual period
  - 1. Moderate exercise
  - 2. Avoiding chilling or overexertion
  - 3. Additional bathing as necessary for cleanliness and to prevent odor

Ovum and Sperm



NOTE MARKED DIFFERENCE IN SIZE
OF SPERM AND OVUM
SPERM ON RIGHT GREATLY ENLARGED

Male Reproductive System


Kidney
Ureter
Seminal Vesicle
Urinary Bladder
Ejaculatory Duct
Prostate Gland
Pubic Bone
Vas Deferens
Penis
Rectum
Urethra
Bulbourethral Glands
Epididymis
Prepuce
Testis
Glans Penis
Scrotum

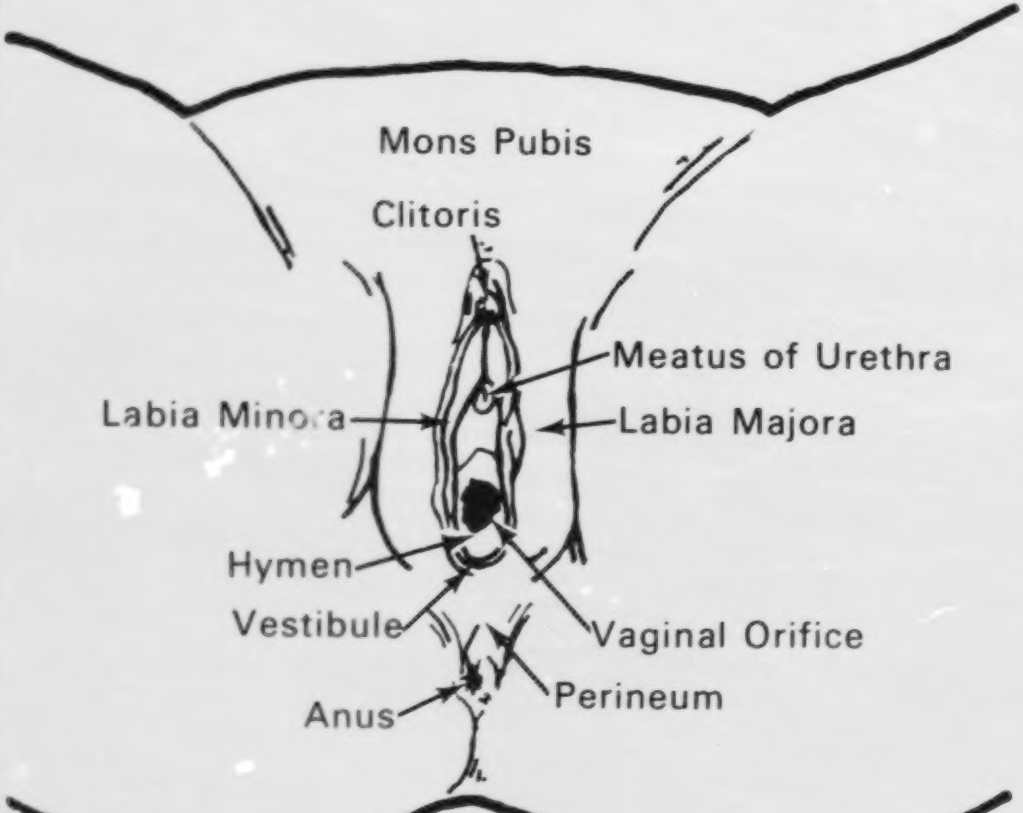
TM 2

N. I - 577-C

1103

Female Reproductive System

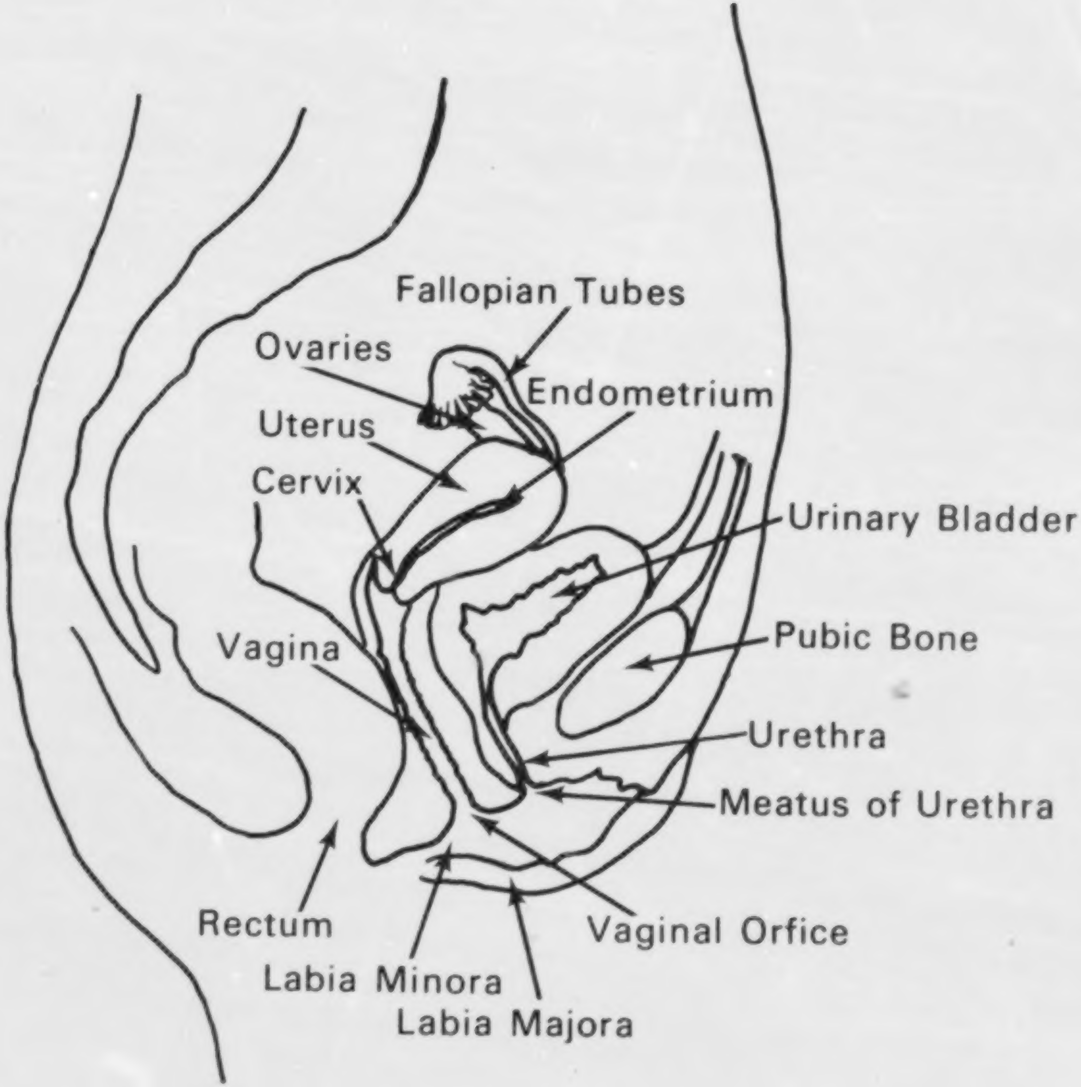
EXTERNAL ORGANS


Mons Pubis
Clitoris
Meatus of Urethra
Labia Minora
Labia Majora
Hymen
Vestibule
Vaginal Orifice
Perineum
Anus

N. I - 579-C

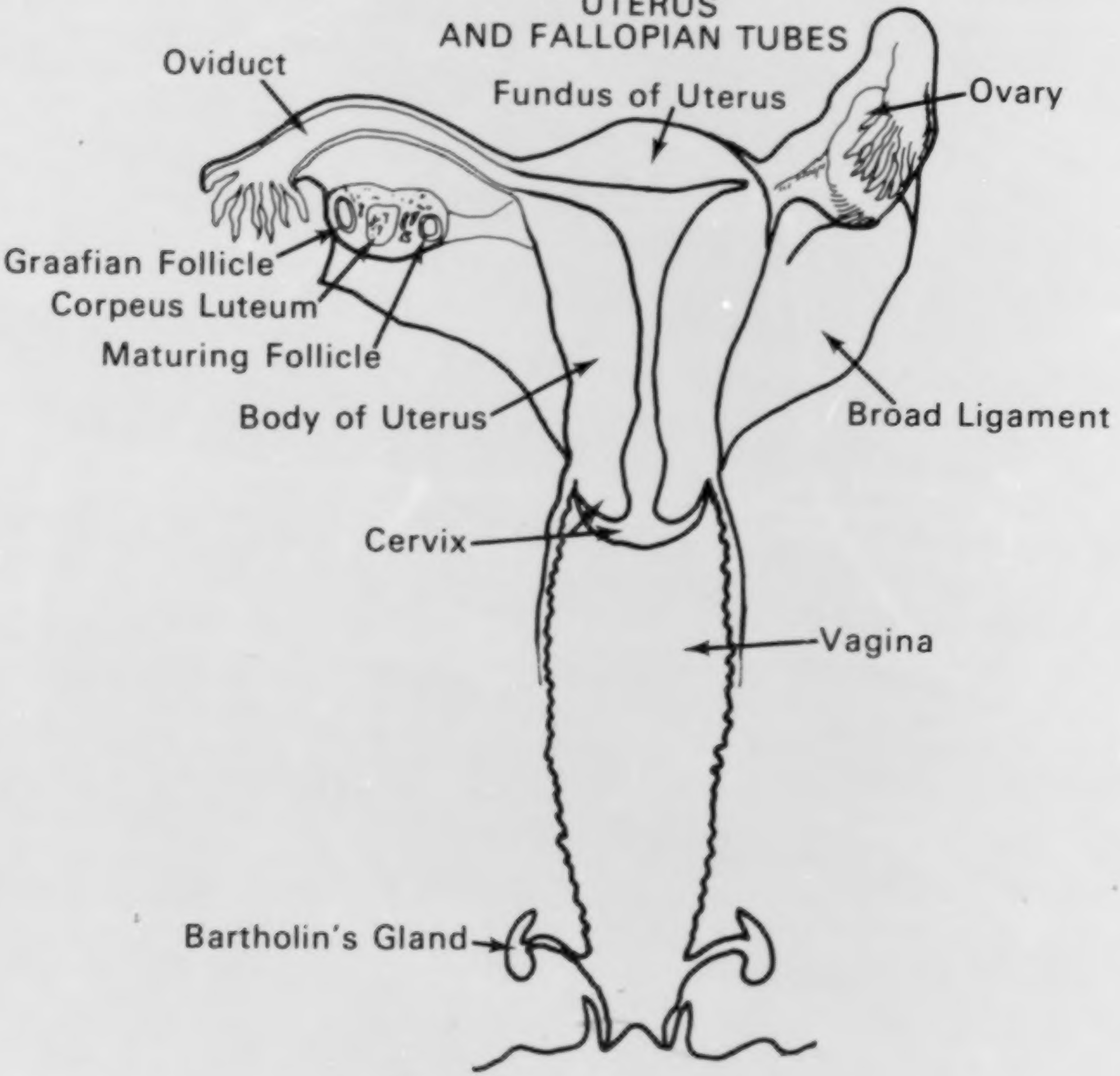
Female Reproductive System

INTERNAL ORGANS

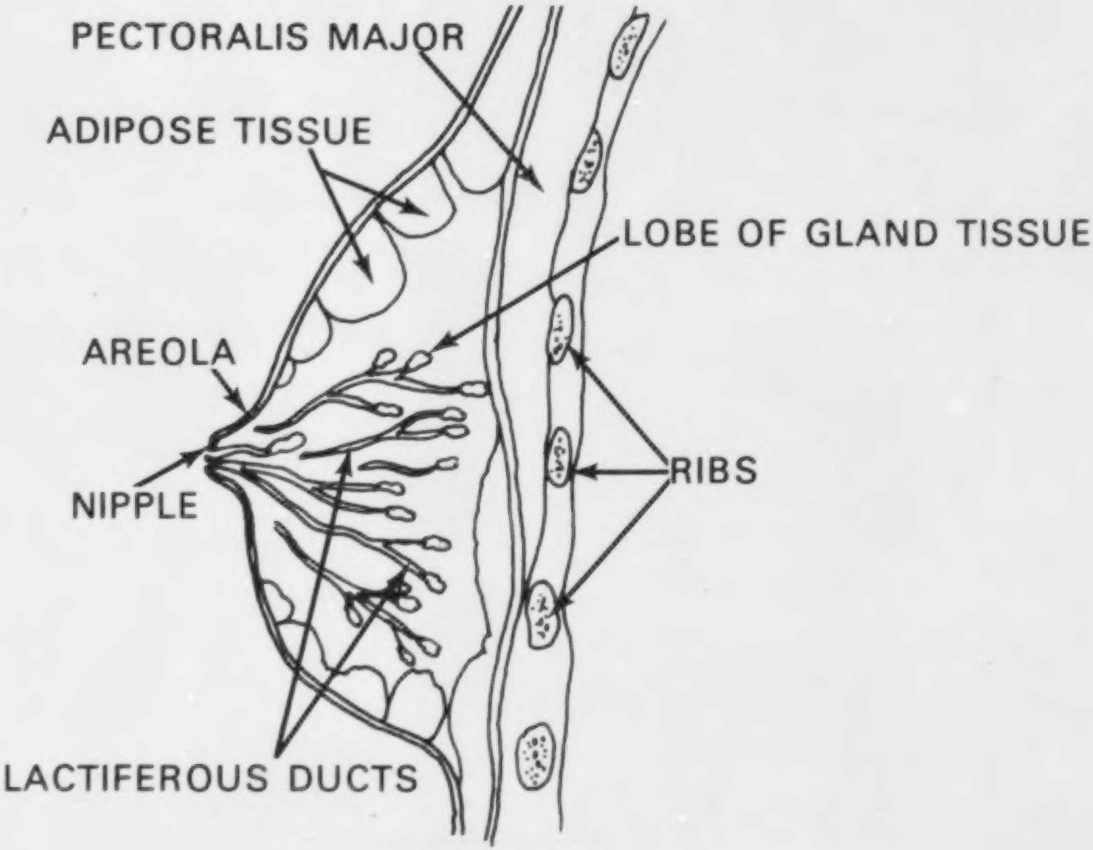

Fallopian Tubes
Ovaries
Endometrium
Uterus
Cervix
Urinary Bladder
Pubic Bone
Vagina
Urethra
Meatus of Urethra
Rectum
Vaginal Orfice
Labia Minora
Labia Majora

Female Reproductive System

UTERUS AND FALLOPIAN TUBES

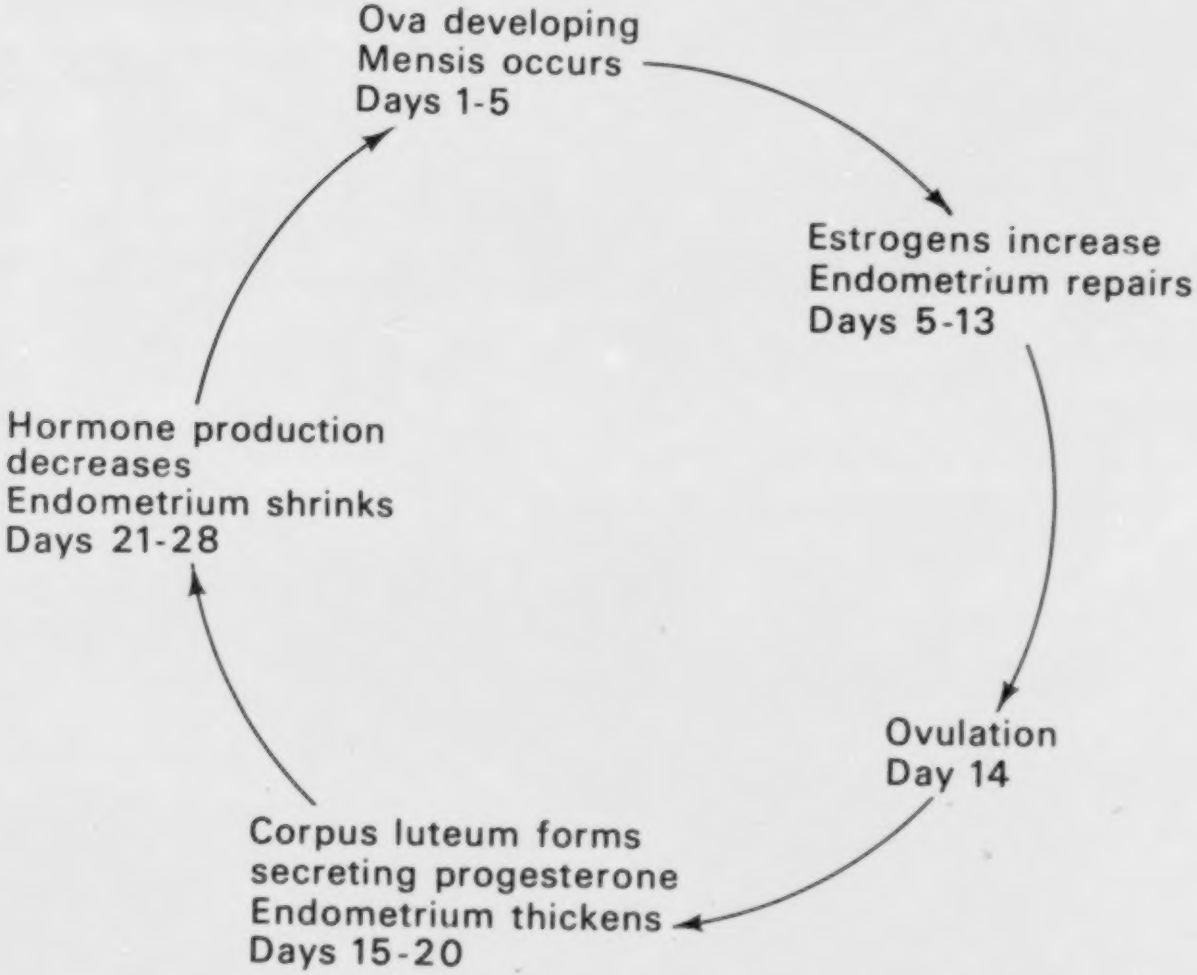

Oviduct
Fundus of Uterus
Ovary
Graafian Follicle
Corpeus Luteum
Maturing Follicle
Body of Uterus
Broad Ligament
Cervix
Vagina
Bartholin's Gland

The Breast


PECTORALIS MAJOR
ADIPOSE TISSUE
LOBE OF GLAND TISSUE
AREOLA
NIPPLE
RIBS
LACTIFEROUS DUCTS

N. I - 585-C

The Menstrual Cycle



Ova developing
Mensis occurs
Days 1-5

Estrogens increase
Endometrium repairs
Days 5-13

Ovulation
Day 14

Corpus luteum forms
secreting progesterone
Endometrium thickens
Days 15-20

Hormone production
decreases
Endometrium shrinks
Days 21-28

DAYS INDICATED ARE APPROXIMATE

THE REPRODUCTIVE SYSTEM
UNIT XVI

ASSIGNMENT SHEET #1--IDENTIFYING THE REPRODUCTIVE ORGANS

1. Using a model, locate and identify the reproductive organs of the male and of the female.

THE REPRODUCTIVE SYSTEM
UNIT XVI

ASSIGNMENT SHEET #2--MENSTRUATION AND MENOPAUSE

1. Write an essay or give a verbal report explaining the process of menstruation.
2. Make a list of false ideas about menstruation and menopause which have been passed from generation to generation.
3. Discuss ways this unit has changed your thinking about menstruation and menopause.

THE REPRODUCTIVE SYSTEM
UNIT XVI

TEST

1. Match the terms on the right to the correct definition.

______a. Study of the diseases of the female reproductive system

______b. Thick, whitish secretion of the reproductive glands in the male

______c. Period at which one becomes capable of reproduction

______d. External pouch which contains the testes

______e. Male reproductive cell

______f. Female reproductive cell

______g. Sexual intercourse

______h. Glutinous; sticky

______i. Pertaining to the os pubis, the anterior bone of the pelvis

______j. Pertaining to the axilla or armpit

______k. External female genitalia

______l. Area between external genitalia and the anus

______m. Fold of the peritoneum that supports the uterus

______n. Beginning of menstruation

______o. Thin-walled cavity in the ovary enclosing a developing ovum

1. Vulva
2. Pubic
3. Copulation
4. Sperm
5. Puberty
6. Gynecology
7. Broad ligament
8. Graafian follicle
9. Spermatic cord
10. Circumcision
11. Mammary glands
12. Viable
13. Semen
14. Scrotum
15. Ovum
16. Viscid
17. Axillary
18. Perineum
19. Menarche
20. Menopause
21. Prepuce
22. Fertilization

______p. Process by which a living organism produces a new individual of the same kind

______q. Bulbous end of the penis

______r. Permanent cessation of menstrual activity

______s. Cord suspending the testes composed of veins, arteries, lymphatics, nerves, and vas deferens

______t. Fold of skin over glans penis

______u. Surgical removal of the prepuce

______v. Milk conveying ducts

______w. Milk secreting glands of the breast

______x. Periodic discharge of blood and tissues from the nonpregnant uterus

______y. That period that marks the cessation of the reproductive function in the female or diminishing testicular activity in the male

______z. Capable of maintaining an independent existence

_____aa. Process by which the male's sperm unites with the female's ovum

23. Lactiferous ducts
24. Menstruation
25. Climacteric
26. Glans penis
27. Reproduction

2. List three functions of the reproductive system.

   a.

   b.

   c.

3. List three fundamental facts about the reproductive system.

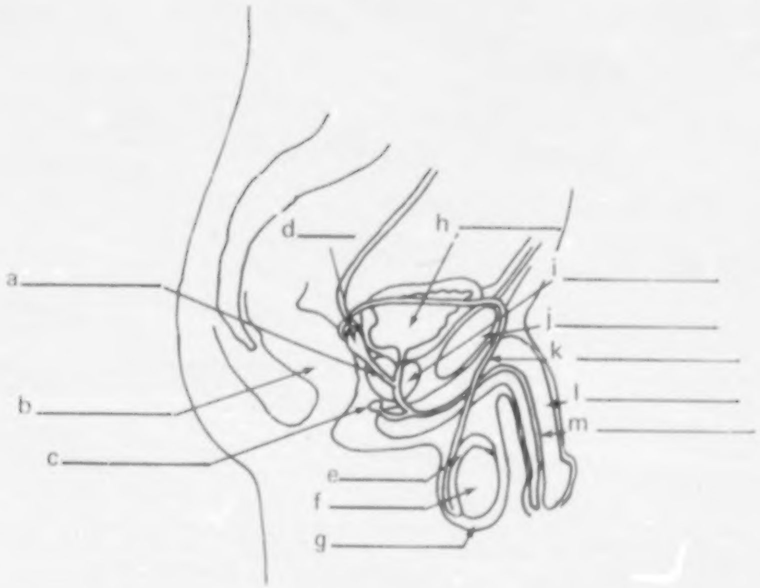
   a.

   b.

   c.

4. Identify the parts and adjacent structures of the male reproductive system by putting the correct number on the blanks.

1) Seminal vesicle
2) Scrotum
3) Urinary bladder
4) Urethra
5) Prostate gland
6) Ejaculatory duct
7) Testis
8) Penis
9) Epididymis
10) Rectum
11) Vas deferens
12) Pubic bone
13) Bulbourethral glands



5. List the location and functions of the male external organs.
   a. Scrotum
   b. Testes
   c. Epididymis
   d. Vas deferens
   e. Penis and urethra

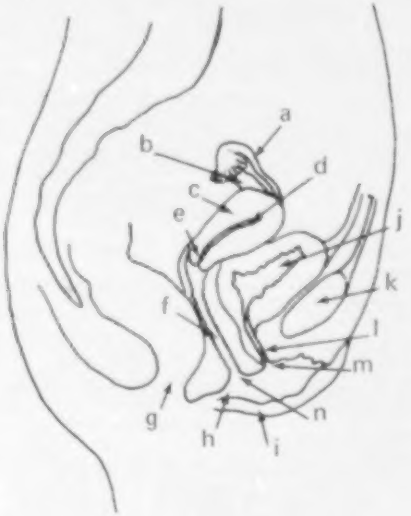
6. List the location and functions of the male internal organs.
   a. Seminal vesicles
   b. Prostate gland
   c. Bulbourethral glands or Cowper's glands
   d. Vas deferens

7. List four secondary sex characteristics in males and the approximate age at which they appear.
   a. Age
   b.
   c.
   d.
   e.

8. Identify the parts and adjacent structures of the female reproductive system by putting the correct letter on the blanks.

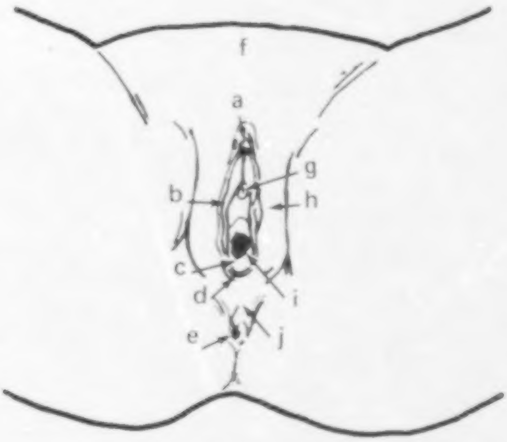
a. Internal organs

______1) Uterus
______2) Fallopian tube
______3) Ovary
______4) Pubic bone
______5) Cervix
______6) Endometrium
______7) Vagina
______8) Urinary bladder
______9) Urethra
______10) Meatus of urethra
______11) Vaginal orifice
______12) Rectum
______13) Labia minora
______14) Labia majora



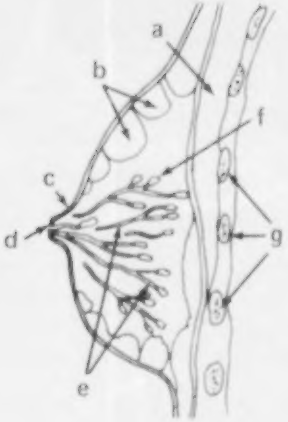
b. External organs

______1) Meatus of urethra
______2) Hymen
______3) Mons pubis
______4) Anus
______5) Labia minora
______6) Vaginal orifice
______7) Perineum
______8) Vestibule
______9) Clitoris
______10) Labia majora



c. Breast

______1) Pectoralis major
______2) Areola
______3) Nipple
______4) Ribs
______5) Adipose tissue
______6) Lactiferous ducts
______7) Lobe of gland tissue



9. List the location and functions of the female external organs.

a. Mons pubis

b. Labia majora

c. Labia minora

d. Clitoris

e. Urethral orifice

f. Vaginal orifice

g. Bartholin's glands and Skene's glands

h. Perineum

i. Anus

10. List the location and functions of the female internal organs.

    a. Vagina

    b. Uterus

    c. Fallopian tubes

    d. Ovaries

11. Describe the parts and structure of the uterus.

12. List four secondary sex characteristics in females and the approximate age at which they appear.

    a. Age

    b.

    c.

    d.

    e.

13. Describe the menstrual cycle.

14. Discuss menopause.

15. Describe the mammary glands giving their function.

16. List four ways to maintain the health of the male reproductive system.

 a.

 b.

 c.

 d.

17. List six ways to maintain the health of the female reproductive system.

 a.

 b.

 c.

 d.

 e.

 f.

THE REPRODUCTIVE SYSTEM
UNIT XVI

ANSWERS TO TEST

1. a. 6
   b. 13
   c. 5
   d. 14
   e. 4
   f. 15
   g. 3
   h. 16
   i. 2
   j. 17
   k. 1
   l. 18
   m. 7
   n. 19
   o. 8
   p. 27
   q. 26
   r. 20
   s. 9
   t. 21
   u. 10
   v. 23
   w. 11
   x. 24
   y. 25
   z. 12
   aa. 22

2. a. Perpetuation of the human species
   b. Sexual gratification
   c. Secretion of hormones

3. Any three of the following
   a. Closely related to the urinary system
      1) In males, the same tract, urethra, is used to discharge semen, sperm, and urine
      2) In females, reproductive and urinary systems are adjacent
   b. Human beings are born with full complement of reproductive organs which grow slowly until puberty
   c. Secondary sex characteristics are dependent upon hormones secreted by the gonads
   d. At puberty, the gonads gradually become functional and secondary sexual characteristics begin to develop
   e. A sperm and an ovum each have twenty-three chromosomes; their union provides the twenty-three pairs of chromosomes for the new individual

4. a. 6
b. 10
c. 13
d. 1
e. 9
f. 7
g. 2
h. 3
i. 5
j. 12
k. 11
l. 8
m. 4

5\.

	ORGAN	LOCATION	FUNCTION
a.	Scrotum	Posterior to penis	Protects testes Regulates and maintains favorable temperature for sperm production
b.	Testes	In scrotum	Produce sperm Produce testosterone
c.	Epididymis	On top and behind each testis	Collects sperm Stores sperm while maturing Conducts sperm to outside
d.	Vas deferens	From testis through lower abdomen to urethra	Transports sperm from the testes to the urethra
e.	Penis and urethra	Suspended from front and sides of pubic arch	Carries semen into vagina during copulation Carries urine from bladder

6\.

	ORGAN	LOCATION	FUNCTION
a.	Seminal vesicles	Directly behind the urinary bladder	Contribute essential components to semen
b.	Prostate gland	Below urinary bladder, surrounding the first part of the urethra	Secretes alkaline fluids which enhance sperm mobility Contracts smooth muscles to aid ejaculation
c.	Bulbourethral glands or Cowper's glands	On each side of urethra	Secrete alkaline viscid fluid which removes urine residue Secrete mucus for lubrication
d.	Vas deferens	From testes through lower abdomen to urethra	Transports sperm from testes to urethra

7. a. Appear at puberty, approximately twelve to fourteen years of age

Any four of the following

b. Development of firmer musculature

c. Increased activity of sudoriferous and sebaceous glands

d. Growth of beard, pubic, and axillary hair with general increase of hair growth all over the body

e. Change in body form with broader shoulders, narrow hips

f. Change in voice to deeper tones

8.

a. Internal	b. External	c. Breast
1) c	1) g	1) a
2) a	2) c	2) c
3) b	3) f	3) d
4) k	4) e	4) g
5) e	5) b	5) b
6) d	6) i	6) e
7) f	7) j	7) f
8) j	8) d	
9) l	9) a	
10) m	10) h	
11) n		
12) g		
13) h		
14) i		

9.	ORGAN	LOCATION	FUNCTION
a.	Mons pubis	Skin-covered pad of fat over the symphysis pubis	Protection of pubic bone
b.	Labia majora	From mons pubis downward toward perineum	Surround labia minora
c.	Labia minora	Two thinner folds inside the labia majora	Enclose the vestibule
d.	Clitoris	At the anterior junction of labia majora and labia minora	Sexual excitation
e.	Urethral orifice	Between clitoris and vaginal orifice	Regulates flow of urine
f.	Vaginal orifice	Between labia minora	Opening to vagina
g.	Bartholin's glands and Skene's glands	Near vaginal orifice	Secretion of lubricating fluids
h.	Perineum	Between vaginal orifice and anus	Pelvic floor
i.	Anus	Posterior to perineum	Outlet of alimentary tract

10.	ORGAN	LOCATION	FUNCTION
a.	Vagina	Canal from uterus to external vaginal orifice	Passageway for infant during birth Reception of the male penis during copulation
b.	Uterus	Hollow muscular organ in the center of pelvic cavity, posterior to bladder	Reception, protection, and nourishment of fertilized ovum until a viable infant Menstruation
c.	Fallopian tubes	One attached to each side of the uterus	Movement of ova from ovaries to uterus Fertilization takes place
d.	Ovaries	In pelvic part of the abdomen	Production of hormones and an ovum, usually once per month from alternate ovary

11. Description should include:

    a. Pear-shaped organ divided into three parts

        1) Body--Broader, upper portion

        2) Cervix--Lower, necklike portion

        3) Fundus--Small rounded part above the orifices of the fallopian tubes

    b. Lined with specialized epithelium called endometrium

    c. Suspended and held in place by the broad ligaments

12. a. Appear at puberty, approximately ten to twelve years of age

    Any four of the following

    b. Enlargement of the breasts

    c. Appearance of pubic and axillary hair

    d. Menarche

    e. Changes of body contours due to increase in growth and fatty deposits

    f. Generally mature earlier than males

    g. Increased activity of sudoriferous and sebaceous glands

13. Description should include:

    a. Usually twenty-eight days in length

    b. Usually on the first day of menstruation one of the many ova enclosed in a graafian follicle begins to mature

    c. By the fourteenth day of the cycle the graafian follicle ruptures; ovum is released into the abdominal cavity

    d. Fringed end of fallopian tube sweeps the ovum into the tube where it is slowly propelled by the cilia of the lining to the uterus

    e. Fertilization occurs midway through the tube when the ovum is penetrated by a sperm

    f. Ruptured graafian follicle fills with a golden-colored substance and becomes a corpus luteum secreting increased amounts of progesterone and estrogens; increased production of hormone causes the endometrium to become greatly thickened and vascular

g. If fertilization does not occur, the corpus luteum and its secretions diminish, the blood supply to the endometrium decreases, and the uterine capillaries begin to bleed and endometrium sloughs off

h. Menstrual flow occurs, consisting of blood, mucus, and cast off cells

14. Discussion should include:

a. Menstrual cycles continue as long as ovarian hormones stimulate the endometrium

b. Between the ages of forty-two and fifty-four, average age forty-eight, production of ova ceases

c. Ovaries become chiefly scar tissue and production of estrogens diminishes

d. Lack of estrogens causes atrophy of the uterus, fallopian tubes, the vagina, and the vulva

e. Menopause is a normal condition

15. Description should include:

a. Accessory glands of the female reproductive system

b. Function Lactation

c. Modified sweat glands composed of a number of lobes subdivided into lobules

d. Secretions from the lobules conveyed through the lactiferous ducts to the nipple

e. Begin development at puberty but not functional until the end of a pregnancy

f. Nipple surrounded by the areola, which changes from pink to brown during pregnancy

16. Any four of the following

a. Adequate diet for health of all body systems

b. Daily bath with special attention to external genitalia

c. Circumcision if necessary to facilitate cleanliness of the glans penis

d. Regular physical examination should include examination of the prostate for evidence of tumor or enlargement beginning at age forty

e. Prompt attention and treatment for infections of the genitourinary tract

f. Prevention of genitourinary infections by

  1) Avoiding sexual intercourse with infected persons

  2) Use of clean and sanitary toilet facilities

  3) Avoiding wearing another person's clothing

17. Any six of the following

a. Daily bathing with particular attention to the vulva

b. Prevention of genitourinary infections by

  1) Avoiding sexual intercourse with infected persons

  2) Use of clean and sanitary toilet facilities

  3) Avoiding wearing another person's clothing

  4) Cleaning anus by wiping posteriorly away from vaginal orifice

c. Adequate diet to maintain all body systems

d. Breast self-examination for nodules at monthly intervals

e. Annual physical examination including Papanicolaou's smear, PAP smear

f. Immediate medical attention for

  1) Unusual vaginal discharge, including bloody spotting

  2) Irritation of external genitalia

  3) Marked change in menstrual cycle

  4) Excessive discomfort related to menses or menopause

g. Cultivate good mental health habits

h. Adequate exercise and rest

i. During menstrual period

  1) Moderate exercise

  2) Avoiding chilling or overexertion

  3) Additional bathing as necessary for cleanliness and to prevent odor

MICROBIOLOGY
UNIT XVII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to match terms and definitions associated with microbiology. The student should be able to list functions, influences, and classes of microorganisms. The student should be able to name diseases caused by various organisms. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with microbiology to the correct definition.
2. List six vital functions of living organisms.
3. List five factors influencing growth of microorganisms.
4. List six classes of microorganisms.
5. Name two diseases caused by protozoa.
6. Name the two types of fungi and a disease caused by each.
7. Name two diseases caused by rickettsiae.
8. Name eight diseases caused by viruses.
9. Name three parasitic worms which may infest the human organism.
10. Discuss the two classifications of bacteria.

MICROBIOLOGY
UNIT XVII

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objective sheet.
- B. Provide students with information sheet.
- C. Make transparencies.
- D. Discuss terminal and specific objectives.
- E. Discuss information sheet.
- F. Give test.

II. Student:

- A. Read objectives.
- B. Study information sheet.
- C. Participate in discussion.
- D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Transparency masters
    1. TM 1--Protozoa
    2. TM 2--Fungi
    3. TM 3--Bacteria
    4. TM 4--Rickettsiae and Viruses
    5. TM 5--Helminths (Metazoa)
    6. TM 6--Protozoan Infections

D. Test

E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Thomas, Virginia. *Life Sciences for Health Technologies.* Los Angeles, California: Technicourse, Inc., 1970.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Filmstrip--"Infection Control Series." Concept Media.

MICROBIOLOGY
UNIT XVII

INFORMATION SHEET

I. Terms and definitions

A. Microbiology--Study of microorganisms

B. Microorganisms--Tiny living creatures of varying sizes and shapes which cannot ordinarily be seen with the naked eye

C. Pathogen--Microorganism capable of causing a disease

D. Parasite--Organism that lives within, upon, or at the expense of another living organism known as the host

E. Saprophyte--Organism that lives upon the dead remains of plants and animals

F. Anaerobe--Microorganism which thrives or lives only without oxygen

G. Aerobe--Microorganism which can live and grow only in the presence of oxygen

H. Helminth--Any animal, either free-living or parasitic, belonging to the worm family

I. Chlorophyll--Green substance in plants which manufactures carbohydrates to use for energy

J. Ultraviolet rays--Rays which cause tanning of the skin, production of vitamin D, and destruction of some organisms

K. Optimum--Condition most favorable for growth or activity

L. Metazoa--Multicellular animals such as helminths

M. Molds--Multicellular plants that grow rapidly in favorable conditions

N. Yeasts--Unicellular plants which reproduce by budding

II. Vital functions of living organisms

(NOTE: Each individual microorganism is able to carry out some or all of the vital functions characteristic of living organisms.)

A. Metabolism

B. Growth

C. Reproduction

INFORMATION SHEET

D. Irritability

E. Motion

F. Protection

III. Factors influencing growth of microorganisms

A. Darkness

(NOTE: Many are very low forms of plant life which are colorless, contain no chlorophyll, and grow well in darkness. Many are killed by ultraviolet rays but are not affected by moderate light.)

B. Temperature

(NOTE: Optimum temperature for most microorganisms ranges from that of a cool room to slightly above normal human body temperature.)

C. Moisture

(NOTE: All require some moisture for growth.)

D. Food

(NOTE: Most of the organisms discussed in this unit contain no chlorophyll and cannot manufacture their own food from raw materials.)

E. Oxygen supply

(NOTE: Some are aerobic; others are anaerobic.)

IV. Classes of microorganisms (Transparencies 1, 2, 3, 4, and 5)

A. Protozoa

(NOTE: These are one-cell animals capable of movement by various means.)

B. Fungi

(NOTE: These are low forms of plant life lacking chlorophyll.)

C. Bacteria

(NOTE: These single-cell organisms are considered to be colorless plants.)

D. Rickettsiae

(NOTE: These are smaller than bacteria but larger than virus. They grow only within the cells of the living host.)

INFORMATION SHEET

E. Viruses

(NOTE: A virus cannot grow or reproduce until it has taken over a living cell. Viruses may be studied by direct observation with an electron microscope. Most of the information about them has been gained by studying their effects.)

F. Helminths

(NOTE: Although not true microorganisms, they are included in microbiology because they are microscopic in certain stages of their life cycle.)

V. Diseases caused by protozoa (Transparency 6)

(NOTE: Diseases caused by protozoa are sometimes transmitted by insects.)

A. Amebic dysentery

(NOTE: It is caused by Entamoeba histolytica.)

B. Malaria

(NOTE: It is caused by several species of plasmodia.)

C. Trichomonas infection

(NOTE: This may cause vaginitis.)

VI. Types of fungi and diseases caused by them (Transparency 2)

A. Molds

1. Ringworm

(NOTE: This is tinea capitis.)

2. Athlete's foot

(NOTE: This is epidermophytosis.)

B. Yeasts--Thrush and vaginitis

(NOTE: These are monilia or candida infections.)

VII. Diseases caused by rickettsiae

A. Rocky mountain spotted fever

(NOTE: This is Rickettsia rickettsii.)

INFORMATION SHEET

B. Typhus

(NOTE: This is Rickettsia prowazekii or typhi.)

C. Q fever

(NOTE: This is Coxiella burnetii.)

VIII. Diseases caused by viruses

A. Smallpox--Variola

B. Chickenpox--Varicella

C. Measles--Rubeola

D. German measles--Rubella

E. Influenza

F. Infantile paralysis--Poliomyelitis

G. Mumps--Epidemic parotitis

H. Common cold--Coryza

I. Fever blisters--Herpes simplex

J. Shingles--Herpes zoster

K. Rabies

IX. Common parasitic helminths or worms

A. Roundworm

B. Pinworm

C. Hookworm

D. Trichinella

E. Flatworm

X. Classification of bacteria

A. Nonpathogenic

1. Essential for life

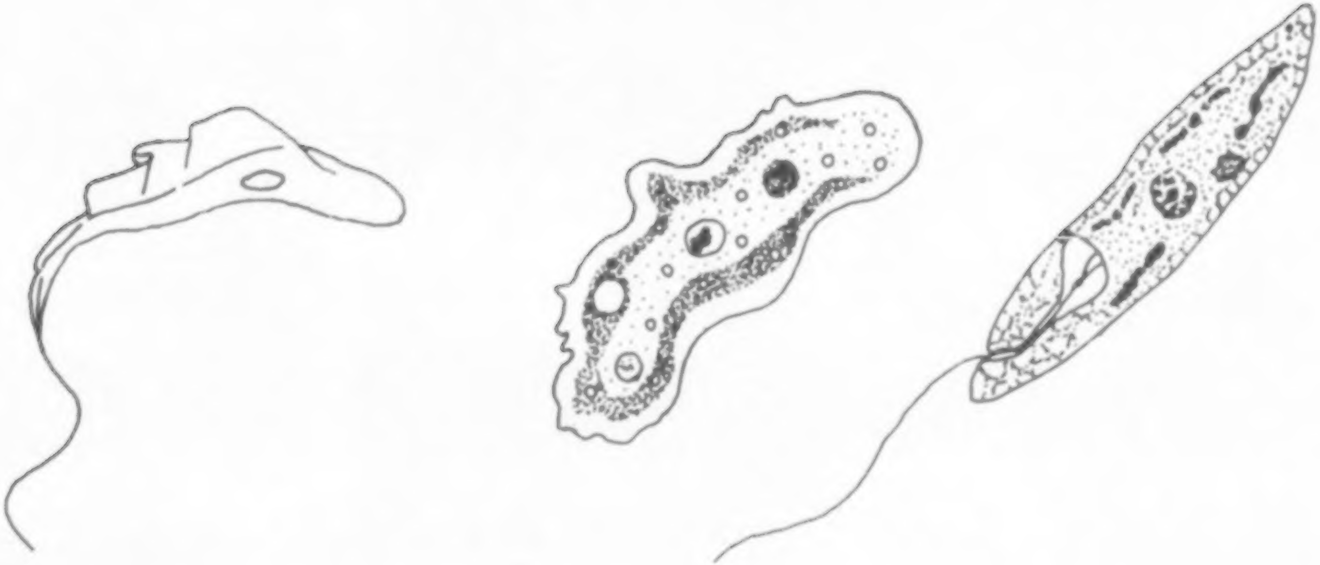
INFORMATION SHEET

2. Assist in decomposition of organic matter

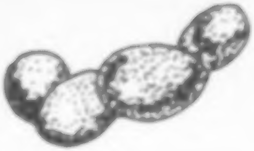
3. Aid in production of some foods and chemicals such as cheeses, sauerkraut, cultured milk products, and lactic acid

B. Pathogenic--Cause many diseases such as syphilis, gonorrhea, tuberculosis, typhoid and paratyphoid fevers, and whooping cough

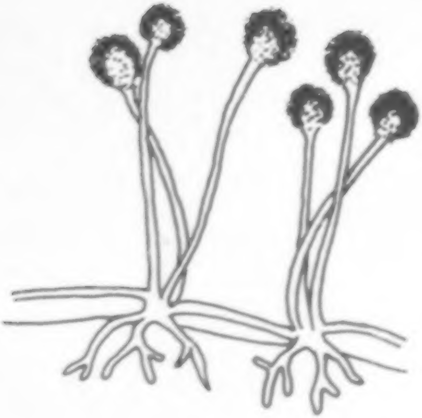
Protozoa



Fungi



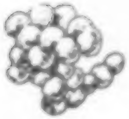
Yeast Cells

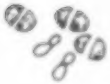


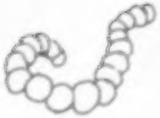
Molds

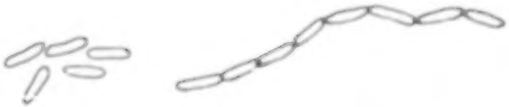
N. I - 621-C

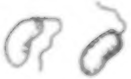
Bacteria

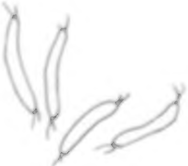

Staphylococci

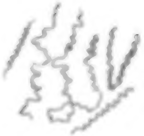

Diplococci


Streptococci


Bacilli (in Chains)

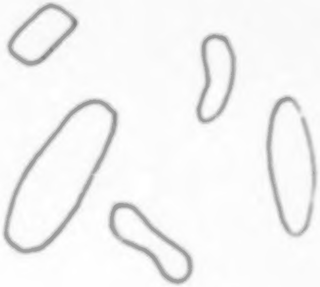

Vibrios


Spirilla

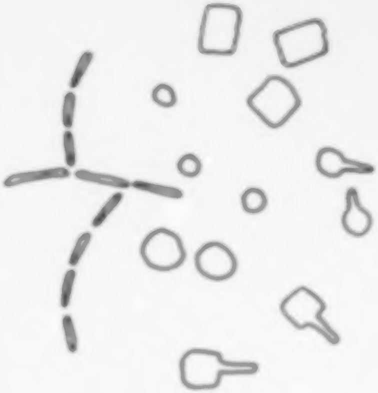

Spirochetes

Rickettsiae and Viruses

(As Seen Under an Electron Microscope)



Rickettsiae



Viruses

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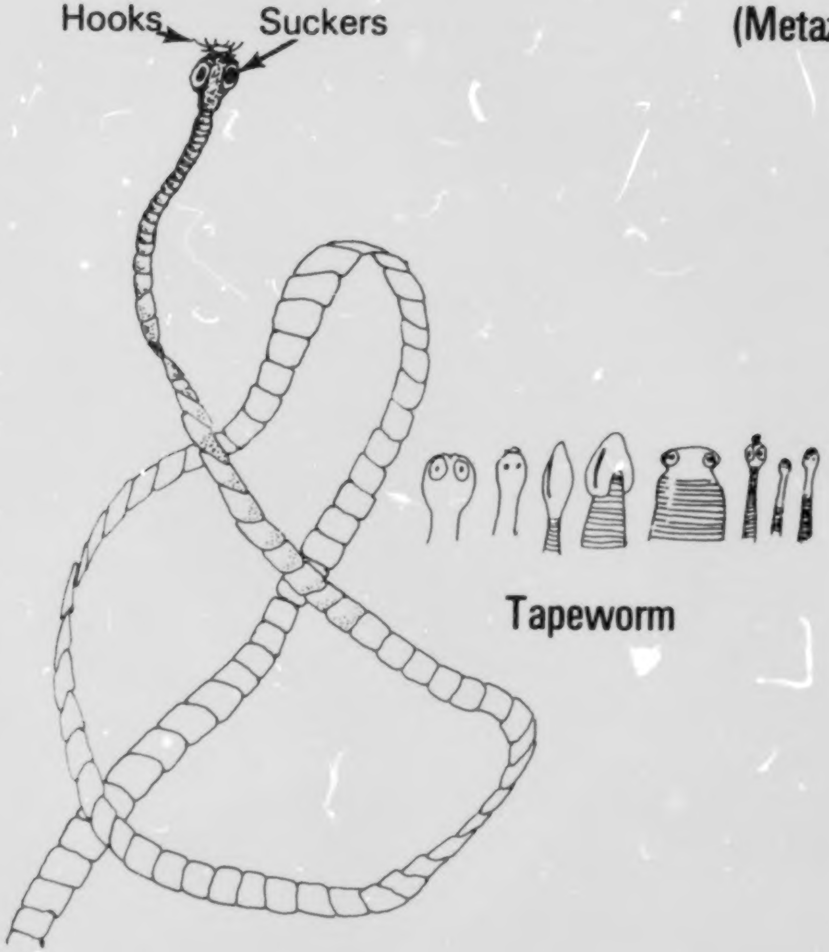
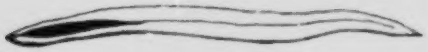
Helminths

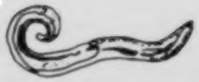
(Metazoa)


Hooks
Suckers

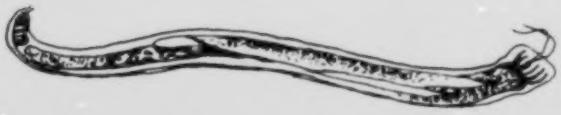
Tapeworm



Roundworm



Pinworm



Hookworm

Protozoan Infections

Amebic Dysentery
(Entamoeba Histolytica)

Malaria
(Plasmodium Vivax)

Trichomonas Vaginalis

TM 6

N. I - 629-C

MICROBIOLOGY
UNIT XVII

TEST

1. Match the terms on the right to the correct definition.

______a. Multicellular animals such as helminths

______b. Condition most favorable for growth or activity

______c. Rays which cause tanning of the skin, production of vitamin D, and destruction of some organisms

______d. Microorganism capable of causing a disease

______e. Green substance in plants which manufactures carbohydrates to use for energy

______f. Unicellular plants which reproduce by budding

______g. Any animal, either free-living or parasitic, belonging to the worm family

______h. Microorganism which can live and grow only in the presence of oxygen

______i. Organism that lives within, upon, or at the expense of another living organism known as the host

______j. Study of microorganisms

______k. Microorganism which thrives or lives only without oxygen

1. Pathogen
2. Helminth
3. Chlorophyll
4. Saprophyte
5. Microbiology
6. Ultraviolet rays
7. Molds
8. Microorganisms
9. Parasite
10. Aerobe
11. Yeasts
12. Metazoa
13. Anaerobe
14. Optimum

______l. Organism that lives upon the dead remains of plants and animals

______m. Multicellular plants that grow rapidly in favorable conditions

______n. Tiny living creatures of varying sizes and shapes which cannot ordinarily be seen with the naked eye

2. List six vital functions of living organisms.

a.

b.

c.

d.

e.

f.

3. List five factors influencing growth of microorganisms.

a.

b.

c.

d.

e.

4. List six classes of microorganisms.

a.

b.

c.

d.

e.

f.

5. Name two diseases caused by protozoa.

   a.

   b.

6. Name the two types of fungi and a disease caused by each.

   a.

   b.

7. Name two diseases caused by rickettsiae.

   a.

   b.

8. Name eight diseases caused by viruses.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

9. Name three parasitic worms which may infest the human organism.

   a.

   b.

   c.

10. Discuss the two classifications of bacteria.

    a.

    b.

MICROBIOLOGY
UNIT XVII

ANSWERS TO TEST

1. a. 12
   b. 14
   c. 6
   d. 1
   e. 3
   f. 11
   g. 2
   h. 10
   i. 9
   j. 5
   k. 13
   l. 4
   m. 7
   n. 8
2. a. Metabolism
   b. Growth
   c. Reproduction
   d. Irritability
   e. Motion
   f. Protection
3. a. Darkness
   b. Temperature
   c. Moisture

d. Food

e. Oxygen supply

4. a. Protozoa

b. Fungi

c. Bacteria

d. Rickettsiae

e. Viruses

f. Helminths

5. Any two of the following

a. Amebic dysentery

b. Malaria

c. Trichomonas infection

6. a. Molds-One of the following: ringworm or athlete's foot

b. Yeasts-One of the following: thrush or vaginitis

7. Any two of the following

a. Rocky mountain spotted fever

b. Typhus

c. Q fever

8. Any eight of the following

a. Smallpox--Variola

b. Chickenpox--Varicella

c. Measles--Rubeola

d. German measles--Rubella

e. Influenza

f. Infantile paralysis-Poliomyelitis

g. Mumps-Epidemic parotitis

h. Common cold-Coryza

- i. Fever blisters--Herpes simplex
- j. Shingles--Herpes zoster
- k. Rabies

9. Any three of the following
    - a. Roundworm
    - b. Pinworm
    - c. Hookworm
    - d. Trichinella
    - e. Flatworm

10. Discussion should include:
    - a. Nonpathogenic
        - 1) Essential for life
        - 2) Assist in decomposition of organic matter
        - 3) Aid in production of some foods and chemicals such as cheeses, sauerkraut, cultured milk products, and lactic acid
    - b. Pathogenic--Cause many diseases such as syphilis, gonorrhea, tuberculosis, typhoid and paratyphoid fevers, and whooping cough

BACTERIOLOGY
UNIT XVIII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to match terms and definitions associated with bacteriology, list forms of bacteria, and describe factors that affect pathogen growth. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with bacteriology to the correct definition.
2. List seven forms of bacteria.
3. Describe three specialized structures of bacteria.
4. Explain the difference between an endotoxin and an exotoxin giving an example of each.
5. Describe eight factors that influence the growth of pathogens.

BACTERIOLOGY
UNIT XVIII

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Make transparencies.

   D. Discuss terminal objectives.

   E. Discuss information sheet.

   F. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1--Cocci and Bacilli

      2. TM 2--Vibrio, Spirilla, and Spirochetes

      3. TM 3--Specialized Structures of Bacteria

      4. TM 4--Toxins

      5. TM 5--Relationships of Microorganisms

D. Test

E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Thomas, Virginia. *Life Sciences for Health Technologies.* Los Angeles, California: Technicourse, Inc., 1970.

C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

BACTERIOLOGY
UNIT XVIII

INFORMATION SHEET

I. Terms and definitions

   A. Bacteriology--Study of bacteria

   B. Bacterium--Microscopic bit of protoplasm with nuclear material scattered throughout and surrounded by a cell wall

   C. Capsule--Gelatinous outer wall of a bacterium

   D. Spore--Coating developed by a very few bacteria for protection from unfavorable conditions

   E. Phagocytosis--Engulfment of bacteria by white blood cells

   F. Toxin--Poisonous substance produced by some bacteria

   G. Endotoxin--Toxin confined within the body of a bacterium

   H. Exotoxin--Toxin excreted by a bacterium into its surrounding medium

   I. Symbiosis--Ability of separate species of microbes to live together

   J. Antibiosis--Association in which one species of microorganisms prevents growth or destroys another species

   K. Flagellum--Hairlike process on a bacterium or protozoon which gives it motility

II. Forms of bacteria--Classified by shape into three groups

   A. Sphere or round forms--Coccus; plural cocci (Transparency 1)

      1. Diplococci--Appear in pairs after division

      2. Streptococci--Cling together in long chains after dividing

      3. Staphylococci--Arrange themselves in grapelike clusters

   B. Rod or cylinder shapes--Bacillus; plural bacilli (Transparency 1)

   C. Spiral or curved forms (Transparency 2)

      1. Vibrio--Short, slightly bent rod with a flagellum at one end

      2. Spirillum; plural spirilla--Longer, rigid, curved organism, usually with several spirals and several flagella

      3. Spirochete--Longer, flexible, and motile spiral organism

INFORMATION SHEET

III. Specialized structures of bacteria (Transparency 3)

   A. Spores

      1. Produced by only a few forms of bacilli; each bacillus forms one spore

      2. Are inactive, dormant forms, not reproductive forms

      3. Resist drying, boiling, and most chemical disinfectants

      4. Spore-forming pathogens include the organisms which cause anthrax, botulism, tetanus, and gas gangrene

   B. Capsules

      1. Surround most bacterial cells

      2. Increase virulence of bacteria

      3. Interfere with phagocytosis

      4. Aid in identification

   C. Flagella

      1. Give bacteria ability to move

      2. Present in about half of the rod forms and all spirilla forms; not present in the coccal forms

      3. Presence or absence aids in identification

      (NOTE: Spirochetes do not possess flagella but are motile by rotating in a corkscrew fashion.)

IV. Production of toxins (Transparency 4)

   A. Endotoxins

      1. Remain within the cell until the cell disintegrates

      2. Examples are organisms which cause typhoid fever and bacillary dysentery

   B. Exotoxins

      1. Diffuse out of the intact bacterial cells into the surrounding medium or tissue

      2. Examples are organisms causing tetanus, gas gangrene, diphtheria, and scarlet fever

INFORMATION SHEET

V. Factors influencing the growth of pathogens

A. Moisture

1. Favors growth

2. Drying may kill some bacteria

(NOTE: Drying kills bacteria such as the organisms causing gonorrhea and syphilis; others such as tuberculosis and staphylococcus can withstand drying for long periods and again become active.)

B. Food

1. Pathogenic organisms require organic food and are either saprophytes or parasites

2. Vitamins and all elements that comprise the bacterial cell are required

C. Oxygen--Bacteria may be aerobic or anaerobic

D. Temperature

1. Heat destroys most bacteria

(NOTE: Temperature necessary for destruction depends upon the organism involved.)

2. Freezing does not always destroy bacteria but does reduce growth and metabolic activities

E. pH

1. On the pH scale most bacteria grow best close to the neutral point or slightly on the alkaline side

2. Both acids and alkalis are harmful to bacteria

F. Osmotic pressure--Most bacterial cells can withstand only slight changes in osmotic pressure

G. Light

1. Most bacteria are killed by sunlight

2. Spore formation is stimulated by sunlight

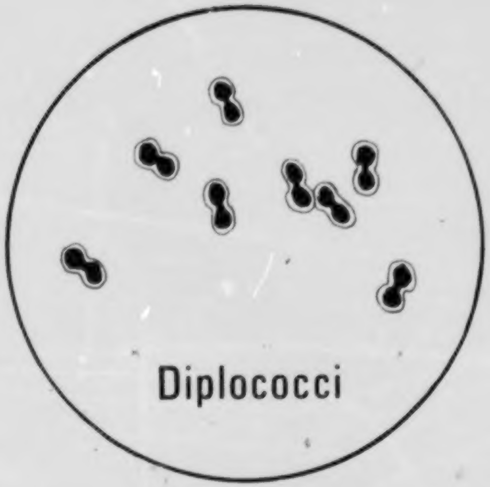
INFORMATION SHEET

H. Effects of neighboring microorganisms (Transparency 5)

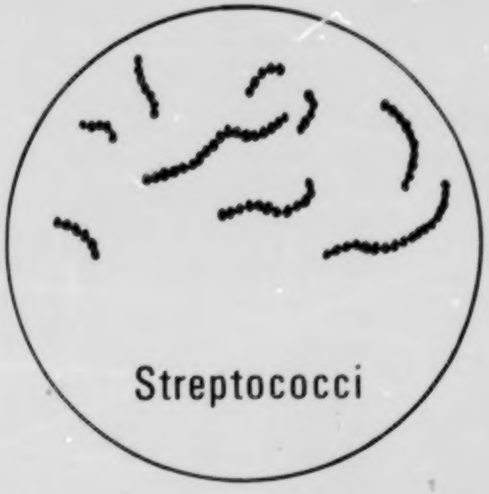
1. Complete independence
2. Symbiosis
3. Antibiosis

Cocci and Bacilli

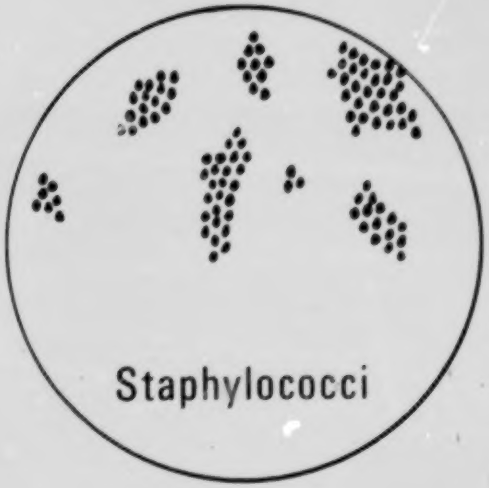
COCCI



Diplococci

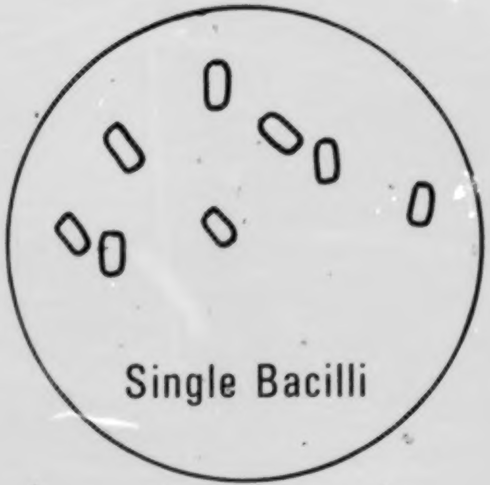


Streptococci

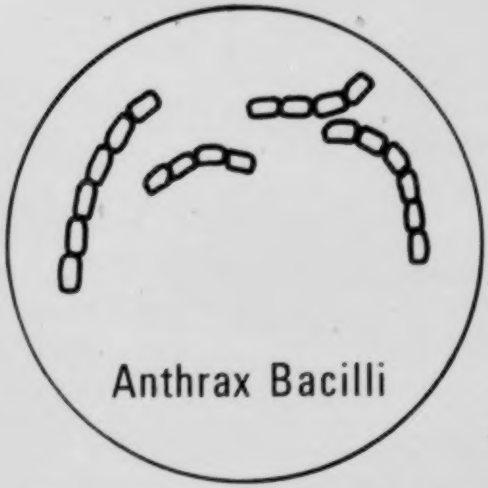


Staphylococci

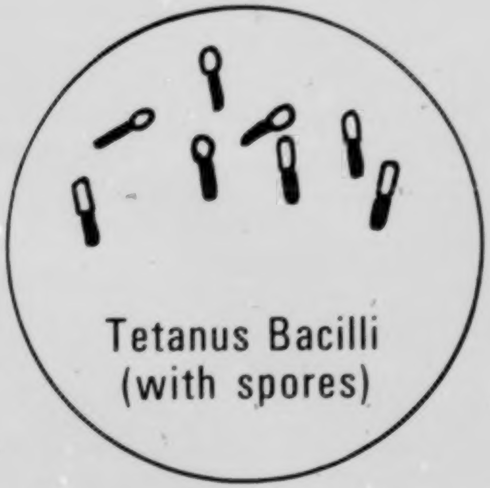
BACILLI



Single Bacilli



Anthrax Bacilli



Tetanus Bacilli
(with spores)

TM 1

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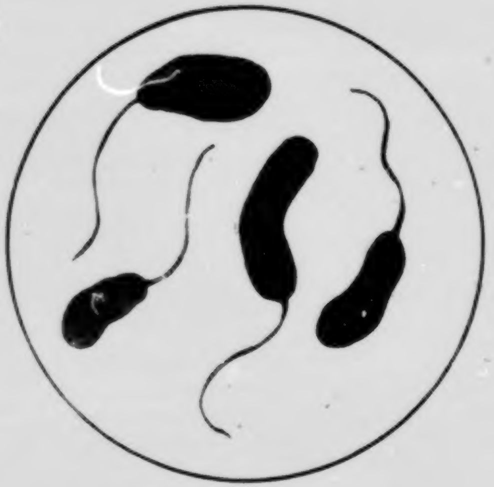
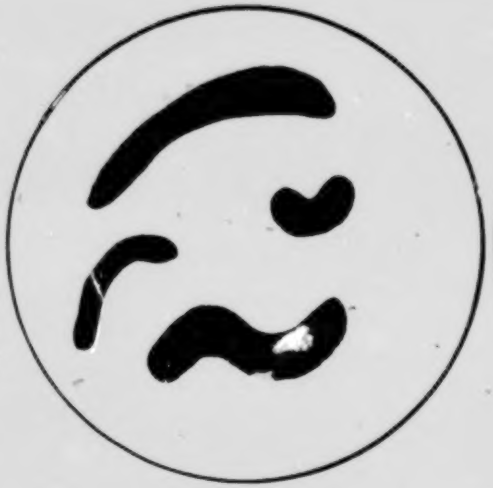
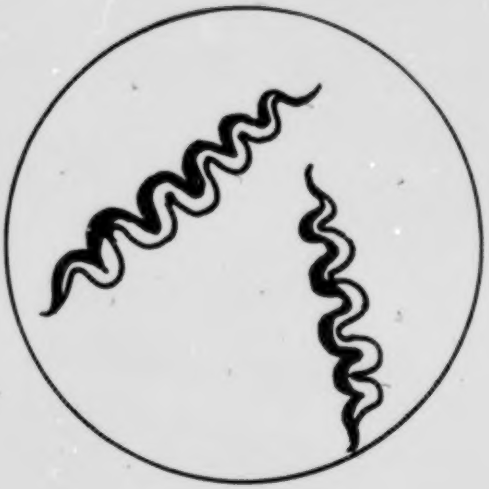
Vibrio, Spirilla, and Spirochetes



Vibrio Comma

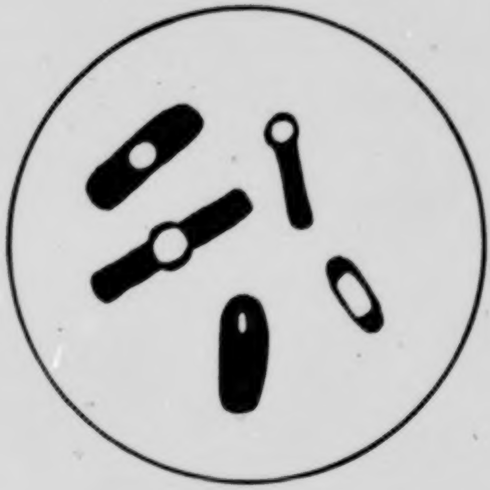


Spirilla

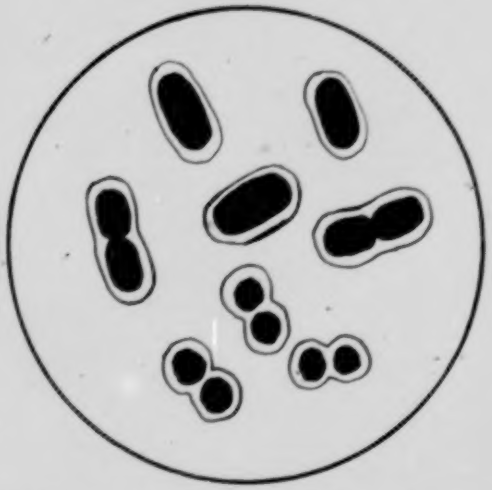


Spirochetes

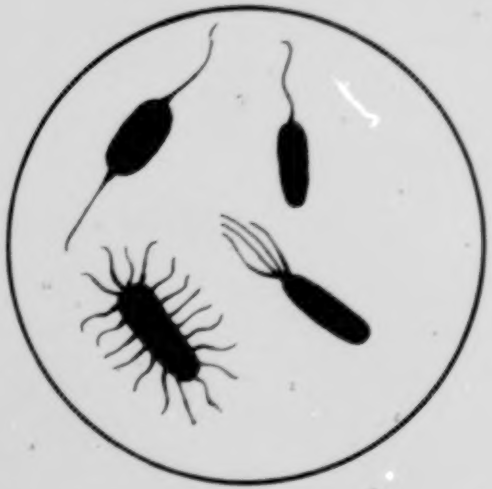
Specialized Structures of Bacteria



Spores
(white structures)

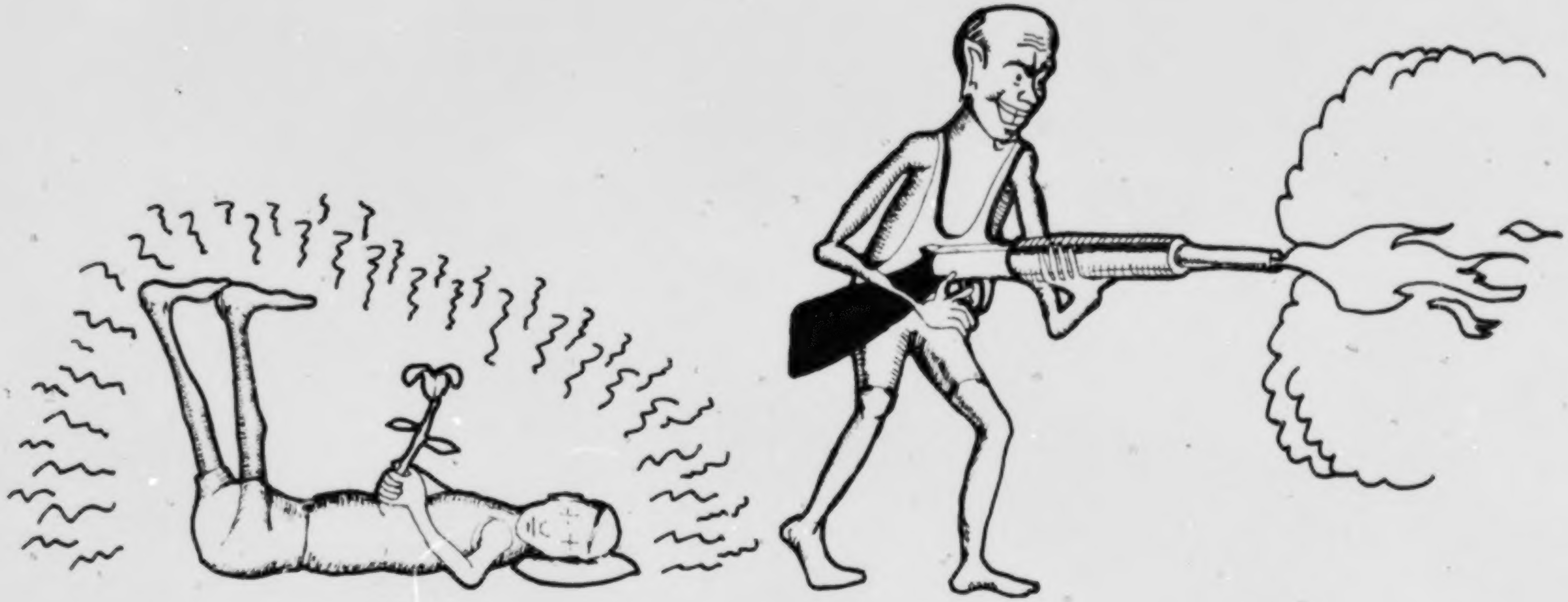


Bacteria with Capsules

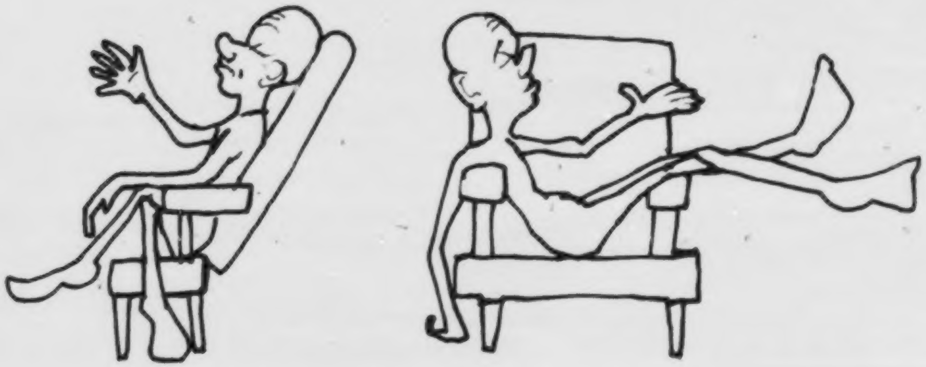


Flagella

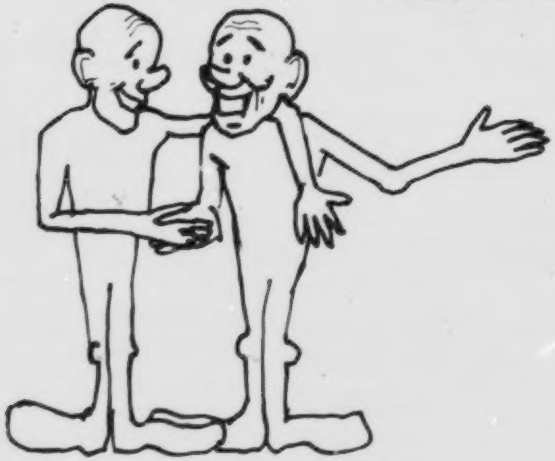
Toxins


ENDOTOXIN
EXOTOXIN

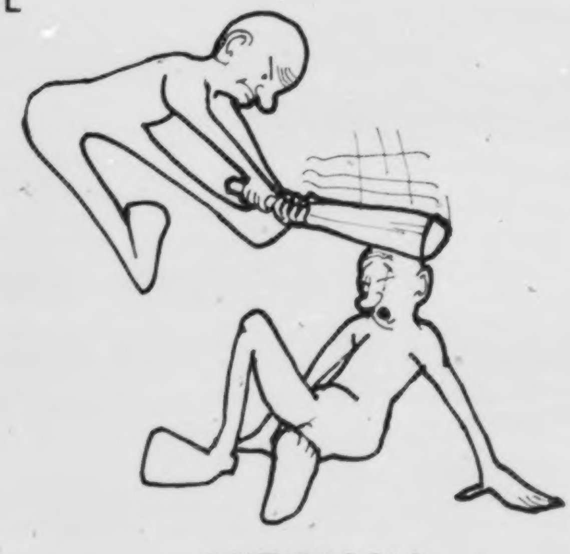
Relationships of Microorganisms



INDEPENDENCE



SYMBIOSIS



ANTIBIOSIS

BACTERIOLOGY
UNIT XVIII

TEST

1. Match the terms on the right to the correct definition.

_____a. Association in which one species of microorganisms prevents growth or destroys another species

_____b. Gelatinous outer wall of a bacterium

_____c. Ability of separate species of microbes to live together

_____d. Coating developed by a very few bacteria for protection from unfavorable conditions

_____e. Study of bacteria

_____f. Engulfment of bacteria by white blood cells

_____g. Microscopic bit of protoplasm with nuclear material scattered throughout and surrounded by a cell wall

_____h. Toxin confined within the body of a bacterium

_____i. Toxin excreted by a bacterium into its surrounding medium

_____j. Poisonous substance produced by some bacteria

_____k. Hairlike process on a bacterium or protozoon which gives it motility

1. Endotoxin
2. Flagellum
3. Phagocytosis
4. Exotoxin
5. Symbiosis
6. Bacterium
7. Antibiosis
8. Bacteriology
9. Toxin
10. Spore
11. Capsule

2. List seven forms of bacteria.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

3. Describe three specialized structures of bacteria.

   a.

   b.

   c.

4. Explain the difference between an endotoxin and an exotoxin giving an example of each.

   a. Endotoxin

   b. Exotoxin

5. Describe eight factors that influence the growth of pathogens.

   a.

   b.

   c.

d.

e.

f.

g.

h.

BACTERIOLOGY
UNIT XVIII

ANSWERS TO TEST

1. a. 7
   b. 11
   c. 5
   d. 10
   e. 8
   f. 3
   g. 6
   h. 1
   i. 4
   j. 9
   k. 2
2. a. Diplococci
   b. Streptococci
   c. Staphylococci
   d. Bacilli
   e. Vibrio
   f. Spirilla
   g. Spirochetes
3. Description should include:
   a. Spores
      1) Produced by only a few forms of bacilli; each bacillus forms one spore
      2) Are inactive, dormant forms, not reproductive forms
      3) Resist drying, boiling, and most chemical disinfectants
      4) Spore-forming pathogens include the organisms which cause anthrax, botulism, tetanus, and gas gangrene

- b. Capsules
  - 1) Surround most bacterial cells
  - 2) Increase virulence of bacteria
  - 3) Interfere with phagocytosis
  - 4) Aid in identification
- c. Flagella
  - 1) Give bacteria ability to move
  - 2) Present in about half of the rod forms and all spirilla forms; not present in the coccal forms
  - 3) Presence or absence aids in identification

4. a. Endotoxin
  - 1) Remains within the cell until the cell disintegrates
  - 2) Any one of these: the organism causing typhoid fever or bacillary dysentery
- b. Exotoxin
  - 1) Diffuses out of the intact bacterial cells into the surrounding medium or tissue
  - 2) Any one of these: the organisms causing tetanus, gas gangrene, diphtheria, or scarlet fever

5. Description should include:
- a. Moisture
  - 1) Favors growth
  - 2) Drying may kill some bacteria
- b. Food
  - 1) Pathogenic organisms require organic food and are either saprophytes or parasites
  - 2) Vitamins and all elements that comprise the bacterial cell are required
- c. Oxygen--Bacteria may be aerobic or anaerobic

d. Temperature

  1) Heat destroys most bacteria

  2) Freezing does not always destroy bacteria but does reduce growth and metabolic activities

e. pH

  1) On the pH scale most bacteria grow best close to the neutral point or slightly on the alkaline side

  2) Both acids and alkalis are harmful to bacteria

f. Osmotic pressure--Most bacterial cells can withstand only slight changes in osmotic pressure

g. Light

  1) Most bacteria are killed by sunlight

  2) Spore formation is stimulated by sunlight

h. Effects of neighboring microorganisms

  1) Complete independence

  2) Symbiosis

  3) Antibiosis

INFECTIOUS DISEASES
UNIT XIX

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss origins and types of infection, the ways pathogens damage tissues, and factors that influence infections. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with infectious diseases to the correct definition.
2. Discuss the two origins of infection.
3. Describe the three extents of infections.
4. Differentiate between acute and chronic infections.
5. Describe four types of infections.
6. Describe three ways pathogens damage tissues.
7. Describe the four stages of an acute infection.
8. Discuss the four factors that determine whether an infection will occur.

INFECTIOUS DISEASES
UNIT XIX

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information sheet.

  C. Make transparency.

  D. Discuss terminal and specific objectives.

  E. Discuss information sheet.

  F. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency master: TM 1--Extent of Infections

  D. Test

  D. Answers to test

II. References:

  A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

  B. Thomas, Virginia. *Life Sciences for Health Technologies.* Los Angeles, California: Technicourse, Inc., 1970.

  C. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

INFECTIOUS DISEASES
UNIT XIX

INFORMATION SHEET

I. Terms and definitions

A. Infection--Invasion of the body by pathogenic organisms and the reaction of the tissues to them

B. Infectious disease--Any disease caused by the growth of pathogenic microorganisms in the body

C. Contaminate--To make unsterile or unclean by contact with the person who has an infectious disease or with articles handled by the infected person

D. Bacteremia--Bacteria in the blood

E. Toxemia--Presence of toxins in the blood

F. Septicemia--Infection in the blood

(NOTE: This is also called blood poisoning.)

G. Pyemia--Form of septicemia in which multiple abscesses are formed in internal organs

H. Tertiary syphilis--Third and most advanced stage of syphilis

I. Virulence--Relative power or ability of pathogens to produce disease

II. Origin of infections

A. Opportunist infections

1. Many types of microorganisms are present in the human body

2. These organisms produce diseases only when given a special opportunity to enter body tissues either through injury to skin or when body resistance is low

Examples: Escherichia coli is a normal inhabitant
of the intestinal tract; it is also
involved in appendicitis, peritonitis,
and cystitis

INFORMATION SHEET

B. True pathogen infections

1. Caused by organisms which are able to invade tissues of healthy individuals through an inherent power of their own

2. Transmitted directly from one person to another or from the environment

   Examples: Tuberculosis, gonorrhea, infectious hepatitis, rabies, measles, and mumps

III. Extent of infections (Transparency 1)

A. Local--Infection confined to one spot or area

   Example: An abscess

B. Focal--Localized infection in which organisms leave the infected area and travel to other parts of the body

   Examples: Abscessed teeth; infected tonsils

C. Generalized--Infections involving the whole body

   Example: Syphilis

   (NOTE: Microorganisms and toxins are frequently carried by the blood from one part of the body to another.)

IV. Duration of infections

A. Acute--Runs a rapid and severe course terminating abruptly

   Example: Lobar pneumonia

B. Chronic--Runs a slow course over a long period of time; may last from weeks to years

   Examples: Tuberculosis, syphilis, and fungal infections

   (NOTE: In some cases, such as undulant fever, the disease begins as an acute infection and if not properly treated becomes chronic.)

V. Types of infections

A. Primary--First or original infection

B. Secondary--One which follows or complicates the original disease

   (NOTE: This type of infection is usually caused by opportunist type organisms.)

INFORMATION SHEET

C. Latent-One which is inactive or hidden

Examples: Early tuberculosis, tertiary syphilis, undulant fever, malaria

D. Mixed-One caused by more than one organism

Examples: Appendicitis, wound infections, Vincent's angina (trench mouth)

VI. Effects of pathogens on tissue

A. Mechanical injury-Organisms can block blood or lymph vessels

Examples: Malaria organisms may block capillaries in the brain; filaria organisms may block lymph vessels causing elephantiasis

B. Destruction of body cells or tissues

Examples: Some organisms such as beta hemolytic streptococci cause hemolysis or rupture of red blood cells; polio virus and syphilis spirochetes destroy nerve tissue

C. Injury by toxins-Symptoms of some diseases are caused by the toxins which bacteria produce

Examples: Endotoxins usually produce general effects such as fever; exotoxins produce specific effects such as nerve damage by tetanus toxin or tissue destruction by gas gangrene

VII. Stages of an acute infection

A. Incubation-Period between entrance of organisms to the body and onset of symptoms

(NOTE: Length of incubation period varies with diseases.)

B. Prodromal-Short period, usually a day or less, when symptoms are vague or cause only mild discomfort

C. Acute-Period of actual illness; symptoms, degree of fever, and length of time depend upon the disease, condition of patient, and treatment

D. Convalescent-Begins with decline of fever and acute symptoms; length of time depends upon the severity of the acute stage, treatment, and general health of the patient

VIII. Factors that influence infection

A. Portal of entry

1. Pathway by which pathogen enters the body determines whether disease will occur

INFORMATION SHEET

2. Most organisms will cause infection only when they enter a particular pathway

   Example: Organisms which cause gonorrhea will infect only the mucous membranes of the genitourinary tract or the eyes; if swallowed, they will not cause gonorrhea

B. Number of organisms

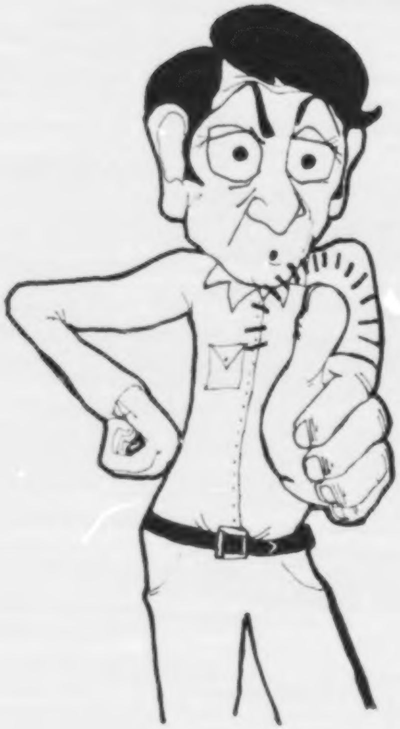
   1. Normal body defenses can usually control a few organisms
   2. In diseases in which the pathogen has a low virulence, large numbers must be introduced to cause an infection

C. Virulence

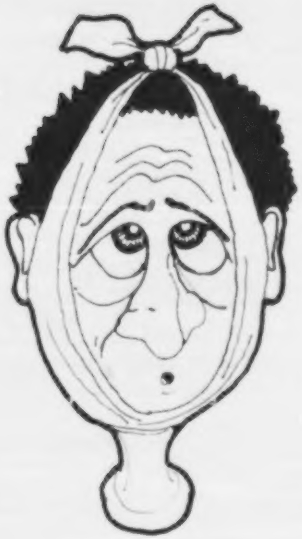
   1. Some pathogens are more virulent than others
   2. Virulence of a particular pathogen may vary from time to time

D. Resistance of the host--Ability of the individual to withstand infection

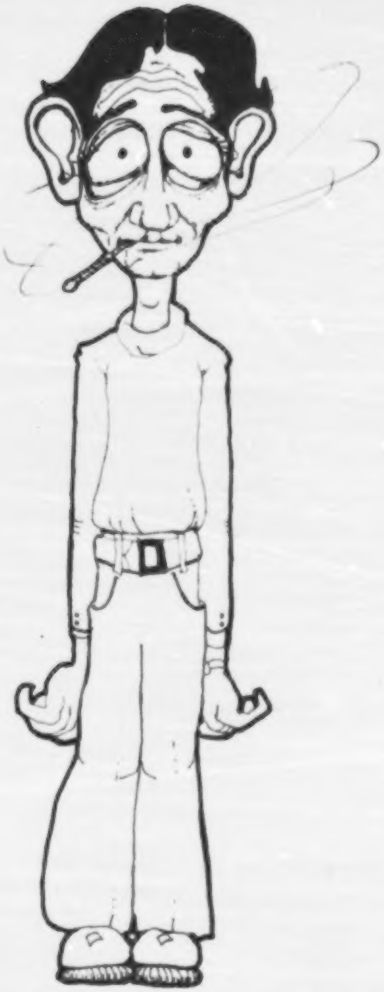
Extent of Infections



Local



Focal



Generalized

INFECTIOUS DISEASES
UNIT XIX

TEST

1. Match the terms on the right to the correct definition.

_____a. Infection in the blood

_____b. Third and most advanced stage of syphilis

_____c. To make unsterile or unclean by contact with the person who has an infectious disease or with articles handled by the infected person

_____d. Invasion of the body by pathogenic organisms and the reaction of the tissues to them

_____e. Form of septicemia in which multiple abscesses are formed in internal organs

_____f. Relative power or ability of pathogens to produce disease

_____g. Presence of toxins in the blood

_____h. Any disease caused by the growth of pathogenic microorganisms in the body

_____i. Bacteria in the blood

1. Contaminate
2. Virulence
3. Bacteremia
4. Pyemia
5. Septicemia
6. Infectious disease
7. Infection
8. Toxemia
9. Tertiary syphilis

2. Discuss the two origins of infection.

a.

b.

3. Describe the three extents of infections.

   a.

   b.

   c.

4. Differentiate between acute and chronic infections.

   a.

   b.

5. Describe four types of infections.

   a. Latent

   b. Primary

   c. Mixed

   d. Secondary

6. Describe three ways pathogens damage tissues.

   a.

   b.

   c.

7. Describe the four stages of an acute infection.

   a.

   b.

   c.

   d.

8. Discuss the four factors that determine whether an infection will occur.

a.

b.

c.

d.

INFECTIOUS DISEASES
UNIT XIX

ANSWERS TO TEST

1. a. 5

   b. 9

   c. 1

   d. 7

   e. 4

   f. 2

   g. 8

   h. 6

   i. 3

2. Discussion should include:

   a. Opportunist infections

      1) Many types of microorganisms are present in the human body

      2) These organisms produce diseases only when given a special opportunity to enter body tissues either through injury to skin or when body resistance is low

   b. True pathogen infections

      1) Caused by organisms which are able to invade tissues of healthy individuals through an inherent power of their own

      2) Transmitted directly from one person to another or from the environment

3. Description should include:

   a. Local--Infection confined to one spot or area

   b. Focal--Localized infection in which organisms leave the infected area and travel to other parts of the body

   c. Generalized--Infections involving the whole body

4. Acute--Runs a rapid and severe course terminating abruptly

   Chronic--Runs a slow course over a long period of time; may last from weeks to years

5. Description should include:

   a. Latent--One which is inactive or hidden

   b. Primary--First or original infection

   c. Mixed--One caused by more than one organism

   d. Secondary--One which follows or complicates the original disease

6. Description should include:

   a. Mechanical injury--Organisms can block blood or lymph vessels

   b. Destruction of body cells or tissues

   c. Injury by toxins--Symptoms of some diseases are caused by the toxins which bacteria produce

7. Description should include:

   a. Incubation--Period between entrance of organisms to the body and onset of symptoms

   b. Prodromal--Short period, usually a day or less, when symptoms are vague or cause only mild discomfort

   c. Acute--Period of actual illness; symptoms, degree of fever, and length of time depend upon the disease, condition of patient, and treatment

   d. Convalescent--Begins with decline of fever and acute symptoms; length of time depends upon the severity of the acute stage, treatment, and general health of the patient

8. Discussion should include:

   a. Portal of entry

      1) Pathway by which pathogen enters the body determines whether disease will occur

      2) Most organisms will cause infection only when they enter a particular pathway

b. Number of organisms

   1) Normal body defenses can usually control a few organisms

   2) In diseases in which the pathogen has a low virulence, large numbers must be introduced to cause an infection

c. Virulence

   1) Some pathogens are more virulent than others

   2) Virulence of a particular pathogen may vary from time to time

d. Resistance of the host--Ability of the individual to withstand infection

IMMUNOLOGY
UNIT XX

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss the principles of immunity and symptoms of inflammation. She should be able to describe treatment of inflammation and list ways by which immunity is acquired. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with immunology to the correct definition.
2. Name the two types of immunity.
3. Discuss four types of nonspecific resistance to disease.
4. Describe the two principal types of inflammation.
5. List the five symptoms of acute inflammation reaction.
6. Describe the four principles of treatment of acute inflammation.
7. Explain the difference between primary and secondary union in the repair of damage to tissues.
8. Discuss the two types of acquired immunity.
9. List two ways of producing each of the two types of acquired immunity.
10. Discuss allergy.
11. Describe the rejection syndrome.

IMMUNOLOGY
UNIT XX

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information sheet.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information sheet.

  F. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Take part in discussion.

  D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency masters

    1. TM 1--Active Immunity

    2. TM 2--Passive Immunity

  D. Test

  E. Answers to test

II. References:

  A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Memmler, Ruth L. and Ruth B. Rada. *The Human Body in Health and Disease.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

C. Thomas, Virginia. *Life Sciences for Health Technologies.* Los Angeles, California: Technicourse, Inc., 1970.

D. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

IMMUNOLOGY
UNIT XX

INFORMATION SHEET

I. Terms and definitions

- A. Immunology--Study of resistance to disease
- B. Immunity--Resistance to disease
- C. Antigen--Any substance which stimulates the formation of antibodies when introduced into the body
- D. Antibody--Protein substance developed by the body in response to the presence of an antigen
- E. Allergy--Abnormal hypersensitivity to one or more substances
- F. Allergen--Substance capable of producing hypersensitivity

II. Types of immunity or resistance to disease

- A. Nonspecific resistance or inborn immunity
- B. Specific resistance or acquired immunity

III. Nonspecific resistance to disease

- A. Species resistance--One species of animals is resistant to diseases which afflict another species

  Examples: Man contracts only a few diseases which are common in lower species; lower animals do not contract many diseases of man; gonorrhea and syphilis are diseases of man only

- B. Racial or group resistance
  1. Certain races or groups have resistance to some diseases to which other groups are highly susceptible
  2. When a disease organism is first introduced into a group or race, it is very virulent
  3. Continued exposure to a certain disease gradually increases the group's immunity

     Examples: American Indians were very susceptible to smallpox; Mexicans seem to have a natural immunity to some intestinal infections

INFORMATION SHEET

C. Individual resistance

  1. Sometimes referred to as genetic or inherited resistance

  2. Individual resistance may vary from time to time

  3. Other conditions such as malnutrition, alcoholism, fatigue, or stress affect individual resistance

D. Mechanical and chemical barriers

  1. Unbroken skin or mucous membranes protect from disease

  2. Lacrimal secretions are somewhat bactericidal

  3. Cilia and mucous membranes protect air passages

  4. Gastrointestinal tract is protected somewhat by gastric secretions

E. Phagocytosis

  1. White blood cells by phagocytosis ward off infections

  2. Phagocytosis helps to limit focus of infection

F. Inflammation response or reaction

  1. Most important of all the nonspecific resistances

  2. Living body tissue responds to irritation or injury by inflammation of area affected

     (NOTE: Suffix *-itis* on a word indicates inflammation of a part.)

IV. Principal types of inflammation

A. Acute inflammatory reaction--Caused by pyogenic or pus-producing bacteria

Examples: Staphylococcus, streptococcus, gonococcus, meningococcus, and pneumococcus

B. Chronic inflammatory reaction--Low grade type of inflammatory response such as those caused by syphilis, tuberculosis, and fungal organisms

V. Symptoms of acute inflammation reaction

A. Redness

B. Heat

INFORMATION SHEET

- C. Swelling
- D. Pain
- E. Loss of function

VI. Treatment of acute inflammation

- A. Rest for the inflamed part
  - 1. Most important treatment
  - 2. Exercise or movement of the part not only increases inflammation but helps to spread pathogens
- B. Application of heat--Dilates blood vessels and increases flow of blood and its white cells and antibodies to the affected part
- C. Open drainage
  - 1. Allows bacteria to escape
  - 2. Relieves tension and swelling of inflamed part
- D. Specific drugs such as antibiotics supplement body's natural defenses to fight the inflammation

VII. Repair of damage to tissues

- A. Primary union
  - 1. Healing of a clean, closed wound
  - 2. Occurs in a short period of time
- B. Secondary union
  - 1. Healing of a large, gaping, or irregular wound
  - 2. Takes a longer period of time

(NOTE: When a wound is large or irregular so that the walls cannot be brought together, the gap is filled in with granulation tissue composed of capillaries and fibroblasts.)

VIII. Types of acquired immunity (Transparencies 1 and 2)

- A. Active
  - 1. Produced when antigens, either microorganisms or exotoxins, are introduced into the body causing the body to manufacture specific antibodies
  - 2. May last for years or a lifetime

INFORMATION SHEET

B. Passive

   1. Produced when antibodies or antitoxins developed by another person or animal are introduced into the body

   2. May be temporary

IX. Ways of producing acquired immunity

   A. Active (Transparency 1)

      1. By having the disease

      2. By vaccination

   B. Passive (Transparency 2)

      1. Antibodies transferred from mother to fetus

      2. By injection of gamma globulin

      3. By injection of antitoxins

X. Allergy

   A. Cannot occur on first contact with a potential allergen because antibodies have not yet been produced

   B. Allergens produce antigen-antibody reaction within the cells of the sensitized tissues accompanied by irritation, swelling, or other symptoms

   C. Some allergic disorders are associated with emotional disturbances

   D. Treatment may include avoiding the allergen, desensitization, or antihistamines

   E. Allergens include pollen, dust, foods, cosmetics, dyes, bee stings, sera, and various drugs

XI. Rejection syndrome

   A. A type of antigen-antibody reaction

   B. May occur following transplantation of an organ or tissue

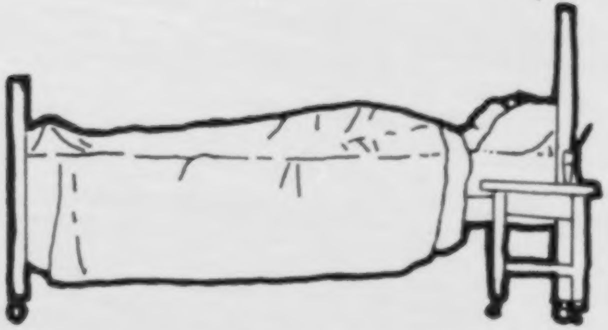
   C. Every organism has a natural tendency to reject foreign substances, especially tissues from another person or animal

INFORMATION SHEET

D. Tissues or organs to be transplanted are cross-matched in much the same way that blood is matched for transfusion; matching tissues is more complex than matching blood types

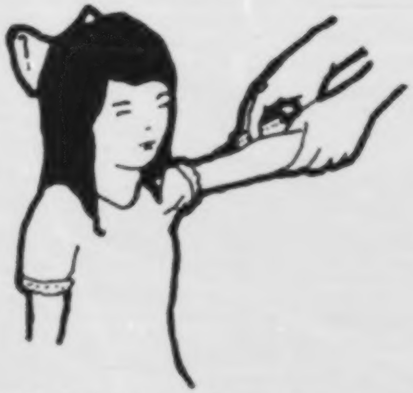
E. Drugs that suppress antibody formation are used to decrease tissue rejection

Active Immunity



Person Becomes Ill with Disease, Manufactures Antibodies. Immunity Lasts.

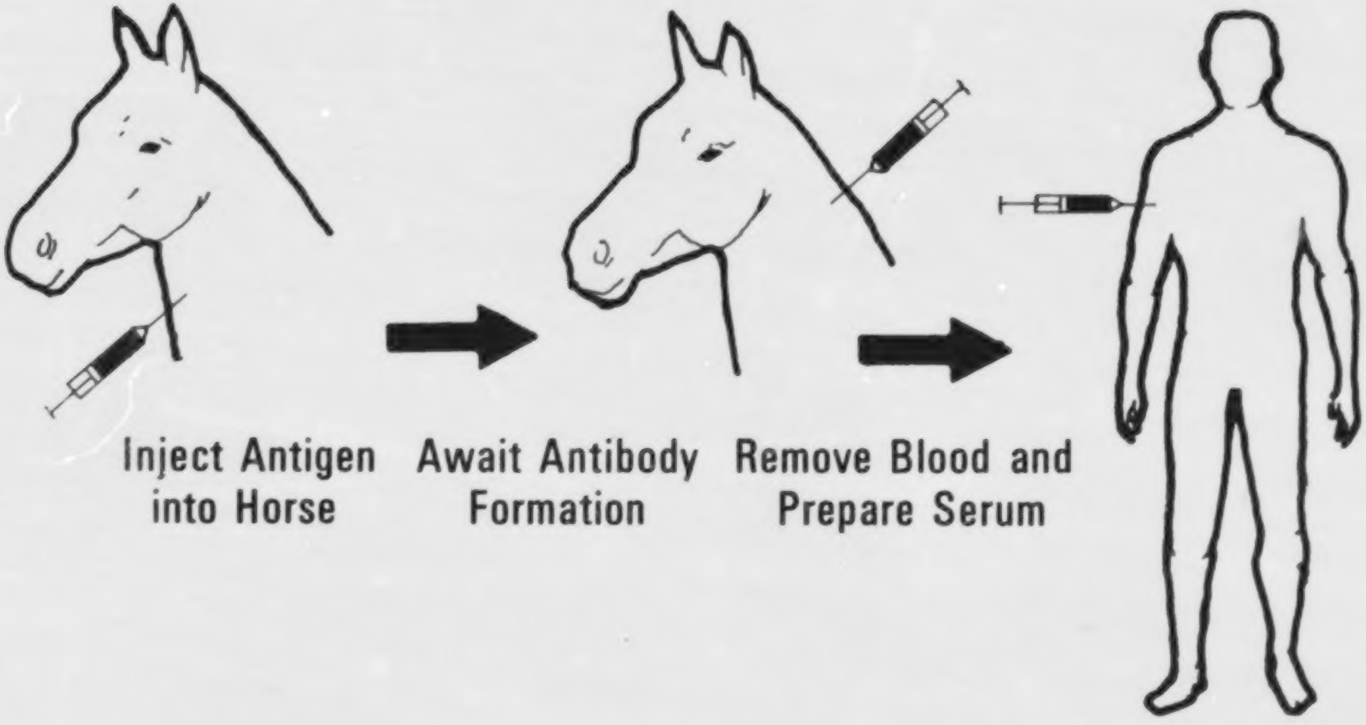
OR



Person Is Vaccinated or Innoculated.

Person Produces Own Antibodies. Immunity Lasts for Months or Years.

Passive Immunity



Inject Antigen into Horse

Await Antibody Formation

Remove Blood and Prepare Serum

Inject Serum into Person

IMMUNOLOGY
UNIT XX

TEST

1. Match the terms on the left to the correct definition.

   _____a. Resistance to disease

   _____b. Protein substance developed by the body in response to the presence of an antigen

   _____c. Study of resistance to disease

   _____d. Substance capable of producing hypersensitivity

   _____e. Any substance which stimulates the formation of antibodies when introduced into the body

   _____f. Abnormal hypersensitivity to one or more substances

   1. Allergen
   2. Antibody
   3. Antigen
   4. Allergy
   5. Immunology
   6. Immunity

2. Name the two types of immunity.

   a.

   b.

3. Discuss four types of nonspecific resistance to disease.

   a.

   b.

c.

d.

4. Describe the two principal types of inflammation.

   a.

   b.

5. List the five symptoms of acute inflammation reaction.

   a.

   b.

   c.

   d.

   e.

6. Describe the four principles of treatment of acute inflammation.

   a.

   b.

   c.

   d.

7. Explain the difference between primary and secondary union in the repair of damage to tissues.

8. Discuss the two types of acquired immunity.

   a.

   b.

9. List two ways of producing each of the two types of acquired immunity.

   a.

      1)

      2)

   b.

      1)

      2)

10. Discuss allergy.

11. Describe the rejection syndrome.

IMMUNOLOGY
UNIT XX

ANSWERS TO TEST

1. a. 6

   b. 2

   c. 5

   d. 1

   e. 3

   f. 4

2. a. Nonspecific resistance or inborn immunity

   b. Specific resistance or acquired immunity

3. Discussion should include any four of the following

   a. Species resistance--One species of animals is resistant to diseases which afflict another species

   b. Racial or group resistance

      1) Certain races or groups have resistance to some diseases to which other groups are highly susceptible

      2) When a disease organism is first introduced into a group or race, it is very virulent

      3) Continued exposure to a certain disease gradually increases the group's immunity

   c. Individual resistance

      1) Sometimes referred to as genetic or inherited resistance

      2) Individual resistance may vary from time to time

      3) Other conditions such as malnutrition, alcoholism, fatigue, or stress affect individual resistance

   d. Mechanical and chemical barriers

      1) Unbroken skin or mucous membranes protect from disease

      2) Lacrimal secretions are somewhat bactericidal

3) Cilia and mucous membranes protect air passages

4) Gastrointestinal tract is protected somewhat by gastric secretions

e. Phagocytosis

1) White blood cells by phagocytosis ward off infections

2) Phagocytosis helps to limit focus of infection

f. Inflammation response or reaction

1) Most important of all the nonspecific resistances

2) Living body tissue responds to irritation or injury by inflammation of area affected

4. Description should include:

a. Acute inflammatory reaction--Caused by pyogenic or pus-producing bacteria

b. Chronic inflammatory reaction--Low grade type of inflammatory response such as those caused by syphilis, tuberculosis, and fungal organisms

5. a. Redness

b. Heat

c. Swelling

d. Pain

e. Loss of function

6. a. Rest for the inflamed part

1) Most important treatment

2) Exercise or movement of the part not only increases inflammation but helps to spread pathogens

b. Application of heat--Dilates blood vessels and increases flow of blood and its white cells and antibodies to the affected part

c. Open drainage

1) Allows bacteria to escape

2) Relieves tension and swelling of inflamed part

d. Specific drugs such as antibiotics supplement body's natural defenses to fight the inflammation

7. Explanation should include:
   - a. Primary union
     1. Healing of a clean, closed wound
     2. Occurs in a short period of time
   - b. Secondary union
     1. Healing of a large, gaping, or irregular wound
     2. Takes a longer period of time

8. Discussion should include:
   - a. Active
     1. Produced when antigens, either microorganisms or exotoxins, are introduced into the body causing the body to manufacture specific antibodies
     2. May last for years or a lifetime
   - b. Passive
     1. Produced when antibodies or antitoxins developed by another person or animal are introduced into the body
     2. May be temporary

9. Answers should include
   - a. Active
     - 1) By having the disease
     - 2) By vaccination
   - b. Passive

     Any two of the following
     - 1) Antibodies transferred from mother to fetus
     - 2) By injection of gamma globulin
     - 3) By injection of antitoxins

10. Discussion should include:
    - a. Cannot occur on first contact with a potential allergen because antibodies have not yet been produced

b. Allergens produce antigen-antibody reaction within the cells of the sensitized tissues accompanied by irritation, swelling, or other symptoms

c. Some allergic disorders are associated with emotional disturbances

d. Treatment may include avoiding the allergen, desensitization, or antihistamines

e. Allergens include pollen, dust, foods, cosmetics, dyes, bee stings, sera, and various drugs

11. Description should include:

a. A type of antigen-antibody reaction

b. May occur following transplantation of an organ or tissue

c. Every organism has a natural tendency to reject foreign substances, especially tissues from another person or animal

d. Tissues or organs to be transplanted are cross-matched in much the same way that blood is matched for transfusion; matching tissues is more complex than matching blood types

e. Drugs that suppress antibody formation are used to decrease tissue rejection

CONTROL OF INFECTIOUS DISEASES
UNIT XXI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list ways illnesses are transmitted and methods of controlling infectious diseases inside and outside the human organism. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the control of infectious diseases to the correct definitions.
2. Discuss five ways infectious diseases can be transmitted.
3. List four factors influencing the transmission of infection.
4. Name three general areas in which transmission of infections can be controlled giving three methods of control in each area.
5. List three methods of controlling organisms outside the body giving one type of each.
6. List two methods of controlling organisms within the body giving one type of each.
7. List three adverse effects of improper or excessive use of antibiotics and antiinfective drugs.

CONTROL OF INFECTIOUS DISEASES
UNIT XXI

SUGGESTED ACTIVITIES

I. Instructor:
  A. Provide students with objective sheet.
  B. Provide students with information sheet.
  C. Make transparencies.
  D. Discuss terminal and specific objectives.
  E. Discuss information sheet.
  F. Give test.

II. Student:
  A. Read objectives.
  B. Study information sheet.
  C. Participate in discussion.
  D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
  A. Objectives
  B. Information sheet
  C. Transparency masters
    1. TM 1--Transmission of Communicable Diseases
    2. TM 2--Transmission of Communicable Diseases (Continued)
    3. TM 3--Transmission of Infection Through Food
    4. TM 4--Transmission of Infection from Food Animals
  D. Test
  E. Answers to test

II. References:

A. Brock, Thomas D. and Katherine M. Brock. *Basic Microbiology with Applications.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1973.

B. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

C. Thomas, Virginia. *Life Sciences for Health Technologies.* Los Angeles, California: Technicourse, Inc., 1970.

D. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Filmstrip--"Infection Control Series." Concept Media.

CONTROL OF INFECTIOUS DISEASES
UNIT XXI

INFORMATION SHEET

I. Terms and definitions

   A. Epidemiology--Study of the incidence, distribution, and control of infectious diseases

   B. Communicable disease--One which can be transmitted from one person to another

   C. Infectious disease--One caused by or capable of being communicated by infection

   D. Epidemic--Diseases which affect a large number of people in a community at the same time

   E. Endemic--Disease present in a community at all times but occurring in only small numbers of people

   F. Pandemic--Widespread epidemic disease

   G. Disinfection--Destruction of pathogenic organisms usually by chemical means

   H. Disinfectant--Agent that destroys pathogenic organisms

   I. Sterilization--Complete destruction of microorganisms and their pathogenic products

   J. Antisepsis--Prevention of infection by the inhibition or destruction of the causitive organism

   K. Antiseptic--Agent that will prevent the growth and development of microorganisms without necessarily destroying them

   L. Asepsis--Free from germs or infection

   M. Bacteriostasis--Inhibition of growth of bacteria, usually by chemical means

   N. Bactericide--Agent that destroys bacteria

   O. Vector--Insect which spreads disease from one host to another

   P. Fomites--Inanimate objects or materials on which pathogens may be conveyed

INFORMATION SHEET

II. Transmission of communicable diseases (Transparencies 1 and 2)

  A. Through the air

    1. During coughing, sneezing, or even talking

    2. Crowded living or working conditions

    3. In dust containing dried bacteria

    4. Kinds of infections transmitted through the air are usually those affecting the respiratory system

  B. Through direct, personal contact

    1. Pathogens which die quickly outside the body are usually transmitted only through direct contact between two persons

    2. When the causal contact is through sexual intercourse, the disease is called a venereal disease

    (NOTE: The two most common venereal diseases are syphilis and gonorrhea.)

    3. Nonvenereal diseases transmitted by direct contact include boils and pimples

    (NOTE: These diseases are usually caused by a staphylococcus strain.)

  C. Through food and water (Transparencies 3 and 4)

    1. Food may be contaminated by an infected food handler

    2. Water may contain pathogens because it has been polluted

    3. Types of pathogens in food include staphylococcus and salmonella which cause food poisoning or gastroenteritis

    4. Polluted water may transmit pathogens that cause typhoid fever, cholera, amoebic dysentery, or poliomyelitis

  D. By insects, ticks, or mites

    1. Insects transmit disease

      a. By contaminating food or open sores with excretions from their bodies

      Examples: Intestinal diseases such as typhoid fever or infectious hepatitis

INFORMATION SHEET

b. By direct transmission to a person through stinging or biting

Examples: Malaria from mosquito bite; Rocky Mountain spotted fever from tick bite

E. By animals (Transparency 4)

1. Domestic or wild birds--Psittacosis

2. Domestic or wild animal bite--Rabies

3. Wild animals--Tularemia or rabbit fever

4. Domestic animals

a. Cow's milk--Undulant fever, tuberculosis

b. Meat--Intestinal parasites

F. From fomites

1. Doorknobs, pencils, toys, clothing, dishes and other articles handled by the infected person

2. Bed, bedding, and bedside furniture that have been in direct or indirect contact with the infected person

III. Factors influencing transmission of infection

A. Presence of pathogenic organism

B. Portal of entry of pathogen

(NOTE: Disease organism must enter the body by a particular pathway for an infection to occur.)

C. Portal of exit of pathogen

(NOTE: Organisms leave the body in upper respiratory secretions, saliva, blood, urine, feces, drainage from wounds, and excretion of the genitourinary tract. In some instances, the portal of entry and exit are the same as in venereal disease. In other types of infection, portal of entry and exit are different. Portal of entry for typhoid organisms is the mouth; portal of exit is through feces and urine.)

D. Vectors of infection

INFORMATION SHEET

IV. Areas in which transmission of infections can be controlled and methods for controlling

A. Portal of entry

1. Bandaging a wound
2. Wearing a mask over nose and mouth
3. Using insect repellant
4. Not eating or drinking contaminated foods or beverages
5. Using sterile needles for injections
6. Proper cleaning after urination and defecation
7. Washing the hands

B. Portal of exit

1. Bandaging a draining sore or wound
2. Wearing a mask over nose and mouth
3. Proper handling of feces, urine, or other excretions
4. Proper handling of contaminated articles such as dressings, instruments, needles and syringes, linens, dishes, and other utensils

C. Vectors or carriers of infection

1. Sterilization or disinfection of fomites
2. Disinfection of air
3. Dust control measures
4. Proper handling of food, water, and milk
5. Control of insects
6. Vaccination of household pets for rabies
7. Proper cooking of meat
8. Proper personal hygiene

INFORMATION SHEET

V. Methods of controlling organisms outside the body

  A. Bacteriostasis

    1. Food preservation such as freezing and canning inhibits bacteria but does not destroy them

    2. Some antibiotics and drugs

  B. Filtration

    1. Water purification

    2. Vaccines prepared by filtration

    3. Dry face masks

    4. Air filtering apparatus

  C. Destruction of microorganisms

    1. Chemical agents such as disinfectants and antiseptics

    2. Heat such as dry heat, moist heat, and steam under pressure

    3. Radiation by ultraviolet rays

    4. Ultrasonic vibrations

VI. Methods of controlling organisms within the body

  A. Prevention of infectious disease

    1. Vaccinations as for smallpox and poliomyelitis for long-lasting immunity

    2. Producing immediate, temporary immunity as with gamma globulin and antitoxins

  B. Treatment of infectious diseases

    1. Antibiotics--Very effective for treating specific infections

       Examples: Penicillin for coccal infections and syphilis

    2. Antiinfective drugs--Man-made substances such as the sulfa drugs

INFORMATION SHEET

3. Passive immunity--By using gamma globulin or antitoxins in treatment of infectious diseases

4. Symptomatic and supportive treatment--To relieve symptoms and to protect from further damage and complications

   (NOTE: Since there are no specific drugs for most viral infections, this is the only form of treatment available. Antibiotics are sometimes given to prevent or treat secondary bacterial infections.)

VII. Adverse effects of improper or excessive use of antibiotics and antiinfective drugs

(NOTE: Antibiotics and antiinfective drugs can have beneficial effects when properly used, but improper or excessive use may produce serious side effects.)

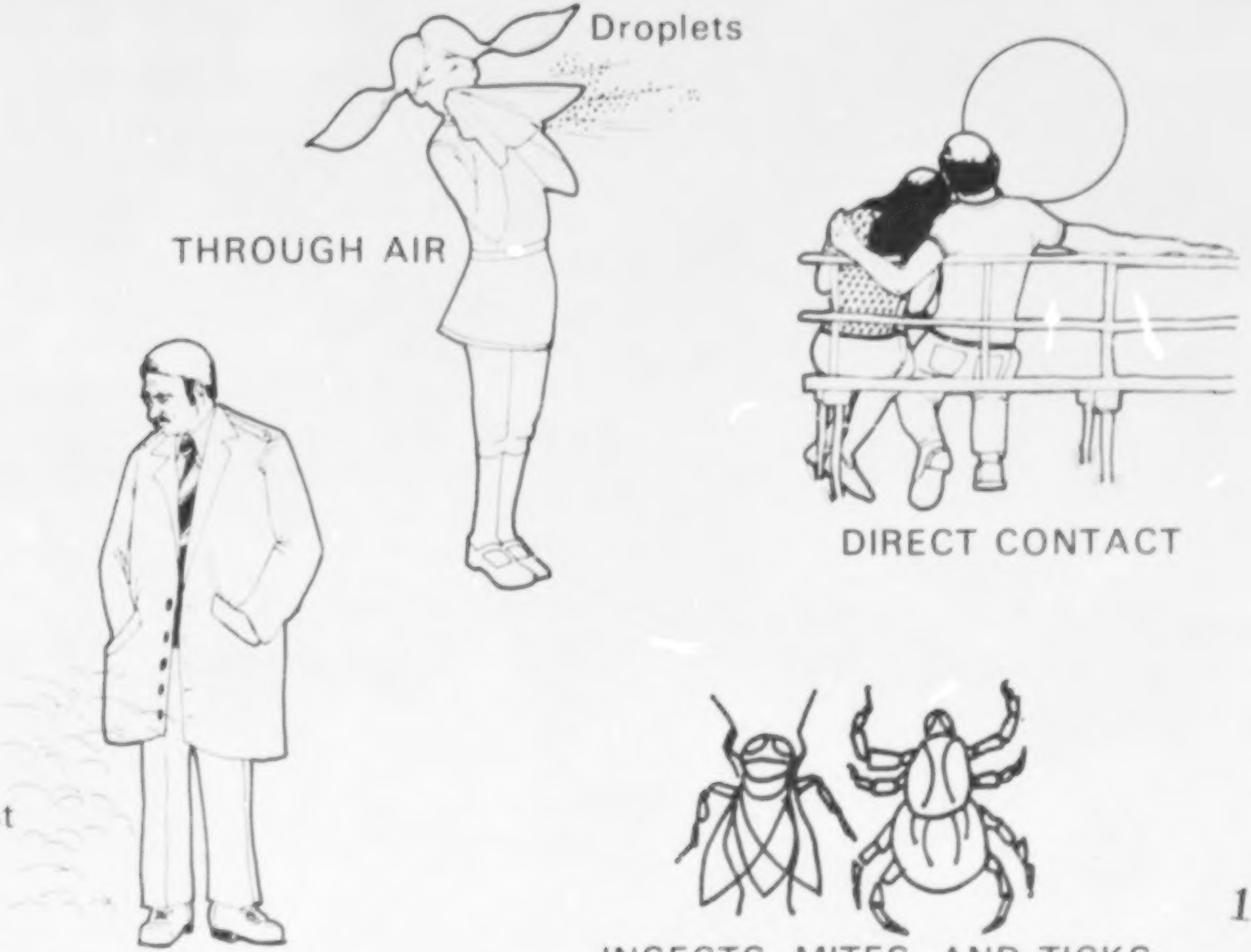
A. Allergy to drugs

B. Normal flora of body may be upset or destroyed with resulting abnormal overgrowth of some organisms

C. Organism may become resistant to drug

D. Toxic side effects may occur with prolonged use

Transmission of Communicable Diseases



THROUGH AIR

Droplets

Dust

DIRECT CONTACT

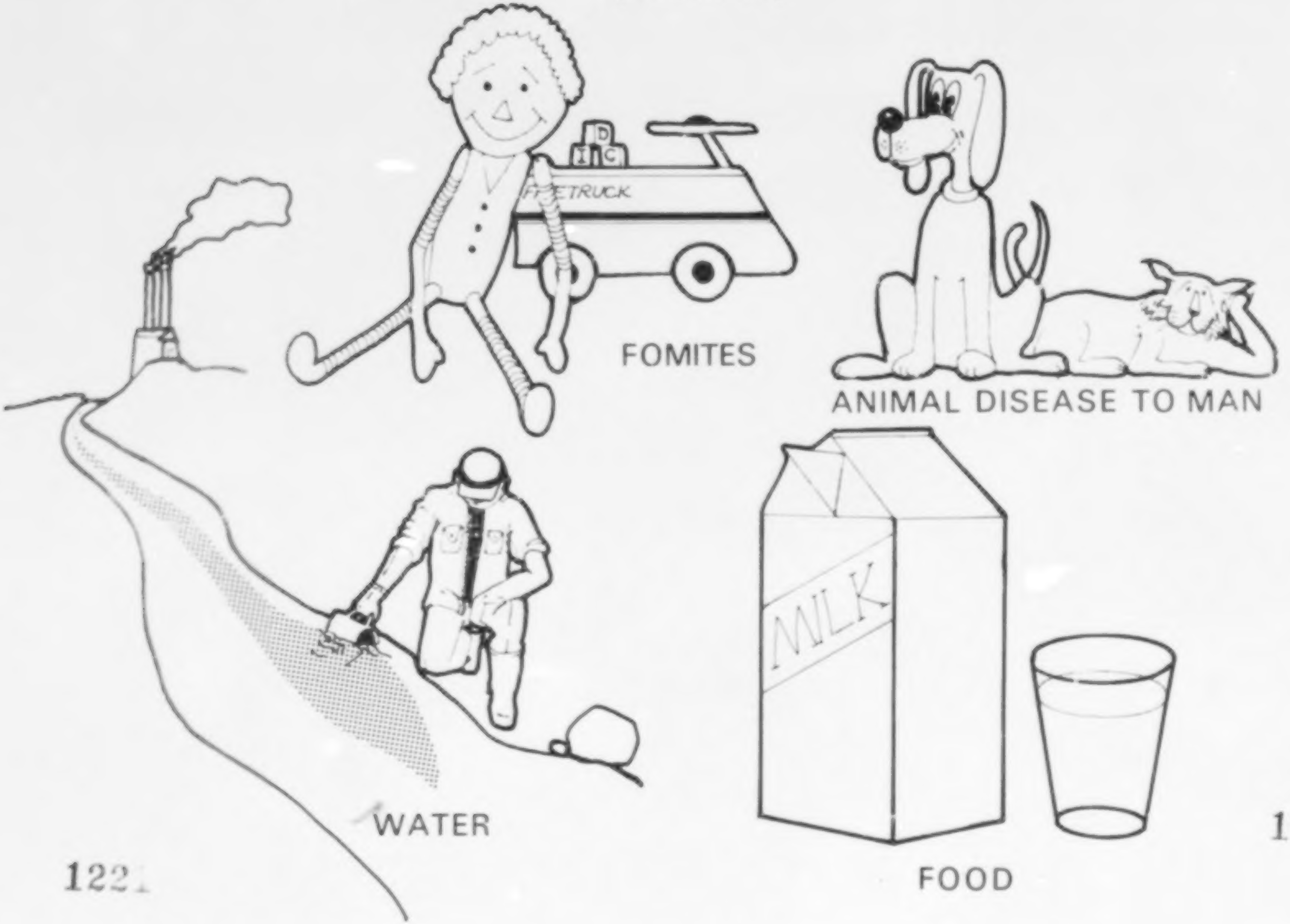
INSECTS, MITES, AND TICKS

1219

1220

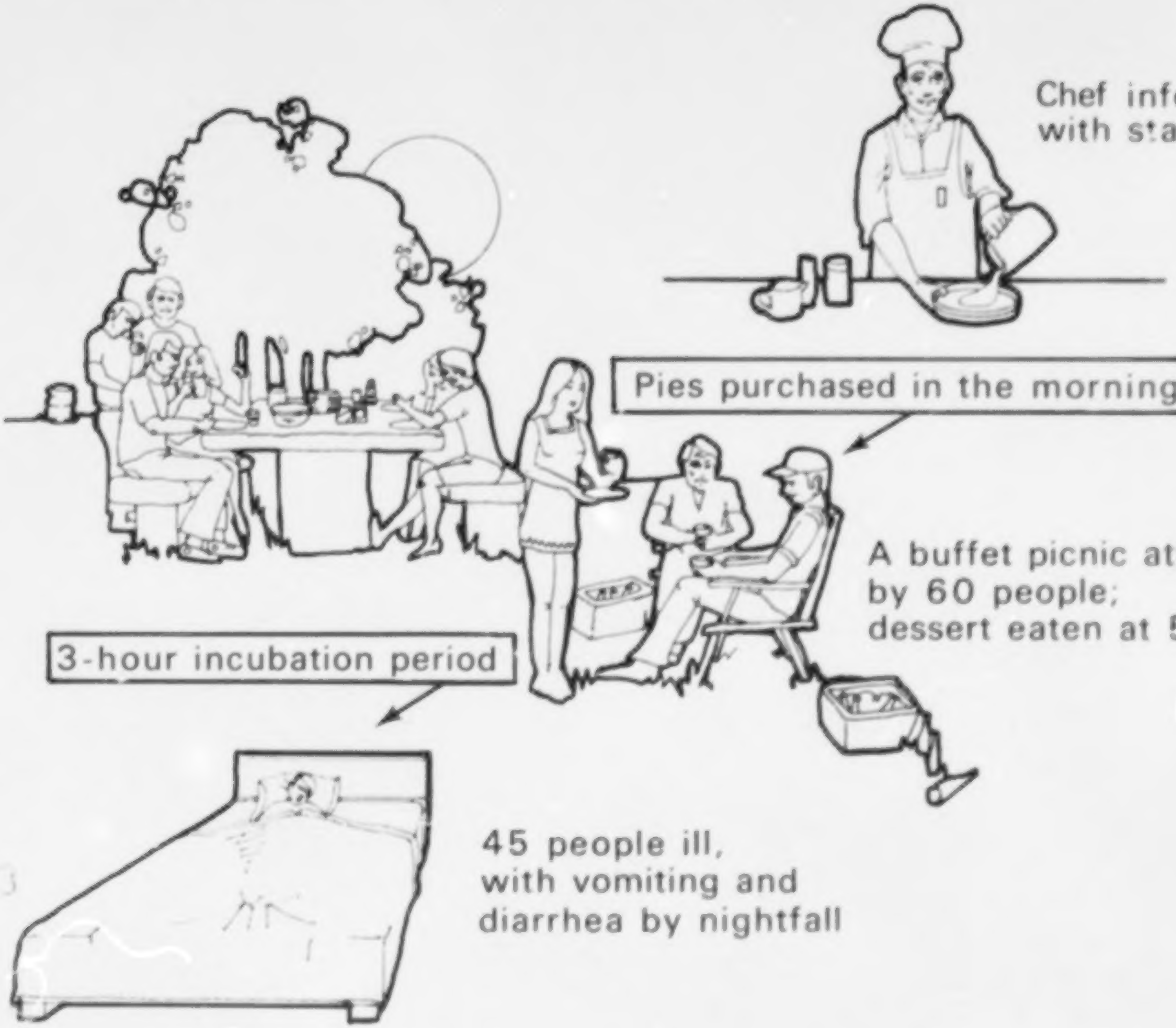
Transmission of Communicable Diseases

(Continued)


FIRETRUCK
D
I C
FOMITES
ANIMAL DISEASE TO MAN
MILK
WATER

FOOD

Transmission of Infection Through Food



Chef infected
with staphylococci

Pies purchased in the morning

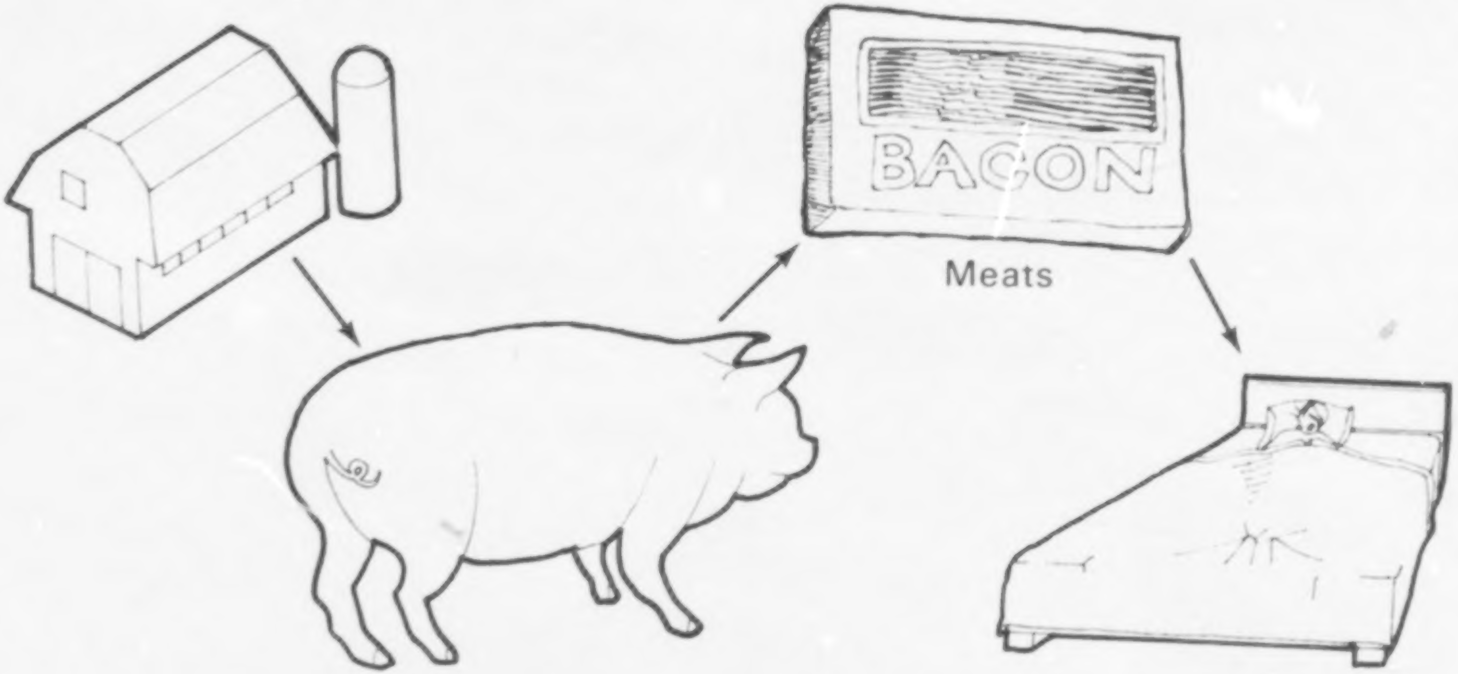
A buffet picnic attended
by 60 people;
dessert eaten at 5 PM

3-hour incubation period

45 people ill,
with vomiting and
diarrhea by nightfall

Transmission of Infection from Food Animals

SALMONELLA FOOD INFECTION



Meats

Ingestion by humans
Incubation period 12-24 hours

CONTROL OF INFECTIOUS DISEASES
UNIT XXI

TEST

1. Match the terms on the right to the correct definition.

_____a. Complete destruction of microorganisms and their pathogenic products

_____b. Free from germs or infection

_____c. One caused by or capable of being communicated by infection

_____d. Agent that destroys bacteria

_____e. Prevention of infection by the inhibition or destruction of the causitive organism

_____f. Study of the incidence, distribution, and control of infectious diseases

_____g. Diseases which affect a large number of people in a community at the same time

_____h. One which can be transmitted from one person to another

_____i. Agent that destroys pathogenic organisms

_____j. Disease present in a community at all times but occurring in only a small number of people

_____k. Destruction of pathogenic organisms usually by chemical means

_____l. Inhibition of growth of bacteria, usually by chemical means

1. Antisepsis
2. Disinfectant
3. Bacteriostasis
4. Sterilization
5. Epidemiology
6. Disinfection
7. Pandemic
8. Communicable disease
9. Bactericide
10. Vector
11. Endemic
12. Antiseptic
13. Infectious disease
14. Epidemic
15. Fomites
16. Asepsis

_____m. Inanimate objects or materials on which pathogens may be conveyed

_____n. Agent that will prevent the growth and development of microorganisms without necessarily destroying them

_____o. Widespread epidemic disease

_____p. Insect which spreads disease from one host to another

2. Discuss five ways infectious diseases can be transmitted.

a.

b.

c.

d.

e.

3. List four factors influencing the transmission of infection.

   a.

   b.

   c.

   d.

4. Name three general areas in which transmission of infections can be controlled giving three methods of control in each area.

   a.

      1)

      2)

      3)

   b.

      1)

      2)

      3)

   c.

      1)

      2)

      3)

5. List three methods of controlling organisms outside the body giving one type of each.

   a.

   b.

   c.

6. List two methods of controlling organisms within the body giving one type of each.

   a.

   b.

7. List three adverse effects of improper or excessive use of antibiotics and antiinfective drugs.

   a.

   b.

   c.

CONTROL OF INFECTIOUS DISEASES
UNIT XXI

ANSWERS TO TEST

1.
    a. 4
    b. 16
    c. 13
    d. 9
    e. 1
    f. 5
    g. 14
    h. 8
    i. 2
    j. 11
    k. 6
    l. 3
    m. 15
    n. 12
    o. 7
    p. 10

2. Discussion should include any five of the following
    a. Through the air
        1) During coughing, sneezing, or even talking
        2) Crowded living or working conditions
        3) In dust containing dried bacteria
        4) Kinds of infections transmitted through the air are usually those affecting the respiratory system
    b. Through direct, personal contact
        1) Pathogens which die quickly outside the body are usually transmitted only through direct contact between two persons
        2) When the causal contact is through sexual intercourse, the disease is called a venereal disease
        3) Nonvenereal diseases transmitted by direct contact include boils and pimples
    c. Through food and water
        1) Food may be contaminated by an infected food handler
        2) Water may contain pathogens because it has been polluted
        3) Types of pathogens include staphylococcus and salmonella which cause food poisoning or gastroenteritis
        4) Polluted water may transmit the pathogens that cause typhoid fever, cholera, amoebic dysentery, or poliomyelitis

d. By insects, ticks, or mites

  1) Insects transmit disease

    a) By contaminating food or open sores with excretions from their bodies

    b) By direct transmission to a person through stinging or biting

e. By animals

  1) Domestic or wild birds--Psittacosis

  2) Domestic or wild animal bite--Rabies

  3) Wild animals--Talaremia or rabbit fever

  4) Domestic animals

    a) Cow's milk--Undulant fever, tuberculosis

    b) Meat--Intestinal parasites

f. From fomites

  1) Doorknobs, pencils, toys, clothing, dishes, and other articles handled by the infected person

  2) Bed, bedding, and bedside furniture that have been in direct or indirect contact with the infected person

3. a. Presence of pathogenic organisms

  b. Portal of entry of pathogen

  c. Portal of exit of pathogen

  d. Vectors of infection

4. a. Portal of entry

  Any three of the following

  1) Bandaging a wound

  2) Wearing a mask over nose and mouth

  3) Using insect repellant

  4) Not eating or drinking contaminated foods or beverages

  5) Using sterile needles for injections

6) Proper cleaning after urination and defecation

7) Washing the hands

b. Portal of exit

Any three of the following

1) Bandaging a draining sore or wound

2) Wearing a mask over nose and mouth

3) Proper handling of feces, urine, or other excretions

4) Proper handling of contaminated articles such as dressings, instruments, needles and syringes, linens, dishes, and other utensils

c. Vectors or carriers of infection

Any three of the following

1) Sterilization or disinfection of fomites

2) Disinfection of air

3) Dust control measures

4) Proper handling of food, water, and milk

5) Control of insects

6) Vaccination of household pets for rabies

7) Proper cooking of meat

8) Proper personal hygiene

5. Answers should include

a. Bacteriostasis

Any one of the following

1) Food preservation such as freezing and canning inhibits bacteria but does not destroy them

2) Some antibiotics and drugs

b. Filtration

Any one of the following

1) Water purification

2) Vaccines prepared by filtration

3) Dry face masks

4) Air filtering apparatus

c. Destruction of microorganisms

Any one of the following

1) Chemical agents such as disinfectants and antiseptics

2) Heat such as dry heat, moist heat, and steam under pressure

3) Radiation by ultraviolet rays

4) Ultrasonic vibrations

6. a. Prevention of infectious disease

Any one of the following

1) Vaccinations as for smallpox and poliomyelitis for long-lasting immunity

2) Producing immediate, temporary immunity as with gamma globulin and antitoxins

b. Treatment of infectious diseases

Any one of the following

1) Antibiotics–Very effective for treating specific infections

2) Antiinfective drugs–Man-made substances such as the sulfa drugs

3) Passive immunity–By using gamma globulin or antitoxins in treatment of infectious diseases

4) Symptomatic and supportive treatment–To relieve symptoms and to protect from further damage and complications

7. Any three of the following

a. Allergy to drugs

b. Normal flora of body may be upset or destroyed with resulting abnormal overgrowth of some organisms

c. Organism may become resistant to drug

d. Toxic side effects may occur with prolonged use

INTRODUCTION TO NUTRITION
UNIT XXII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list classes and functions of nutrients and reasons good nutrition is essential. She should be able to discuss disadvantages of food misinformation and causes of nutritional deficiencies. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with nutrition to the correct definition.
2. List the seven classes of nutrients.
3. List three functions of food.
4. List six reasons good nutrition is essential.
5. Describe a well-nourished person.
6. Discuss six factors that influence food habits.
7. Name the basic four food groups and the amount of each to be eaten by the average adult each day.
8. Discuss disadvantages of food misinformation.
9. Discuss the two primary causes of nutritional deficiency.
10. Discuss reasons nurses need knowledge of nutrition.
11. Prepare a report on nutrition.

INTRODUCTION TO NUTRITION
UNIT XXII

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objective sheet.
- B. Provide students with information and assignment sheets.
- C. Discuss terminal and specific objectives.
- D. Discuss information sheet.
- E. Assist students in completing assignment sheet.
- F. Give test.

II. Student:

- A. Read objectives.
- B. Study information sheet.
- C. Participate in discussion.
- D. Complete assignment sheet.
- E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Assignment Sheet #1-Current Nutrition Interest
- D. Test
- E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Howe, Phyllis S. *Basic Nutrition in Health and Disease.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

C. Mowry, Lillian and Sue R. Williams. *Basic Nutrition and Diet Therapy for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1969.

D. Townsend, Carolynn E. *Nutrition and Diet Modifications for the Nurse.* Albany, New York: Delmar Publishers, 1972.

E. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Films:

A. "Food the Color of Life." Oklahoma State Department of Health.

B. "Nutrition Sense and Nonsense." Oklahoma State Department of Health.

C. "Nutritional Needs of Our Bodies." Oklahoma State Department of Health.

INTRODUCTION TO NUTRITION
UNIT XXII

INFORMATION SHEET

I. Terms and definitions

   A. Nutrition--Study of foods and their relation to health

   B. Nutrient--Chemical compound found in food

   C. Food--Substance that the body uses to yield energy, to build or repair tissues, and/or to regulate body processes

   D. Malnutrition--Lack of necessary food substances in the body

   E. Dietetics--Science of the use of foods in health and disease

   F. Diet therapy--Modifications in the patient's normal diet to meet requirements created by disease or injury

   G. Nutritional deficiency--Insufficient amount of one or more essential nutrients in the diet

   H. Diet--Food and drink consumed each day

   I. Anorexia--Lack or loss of appetite for food

   J. Achlorhydria--Absence of free hydrochloric acid in the stomach

II. Classification of nutrients

   A. Carbohydrates

   B. Fats

   C. Proteins

   D. Minerals

   E. Water

   F. Vitamins

   G. Cellulose

III. Functions of food

   A. Provides heat and energy

   B. Promotes growth

INFORMATION SHEET

    C. Repairs tissues
    D. Regulates body processes

IV. Reasons good nutrition is essential

    A. Promotes a healthier body and mind
    B. Provides greater personal energy and vitality
    C. Resists illness
    D. Speeds healing
    E. Produces stronger bones and muscles
    F. Promotes good posture
    G. Helps individual to feel better and sleep better

V. Characteristics of a well-nourished person

    A. Well-developed body
    B. Average weight for height, age, and body build
    C. Muscles well developed and firm
    D. Skin smooth with healthy color
    E. Eyes bright and clear; no fatigue circles
    F. Hair smooth and glossy
    G. Facial expression alert, without strain
    H. Mucous membranes of eyes and mouth pink
    I. Teeth clean, not discolored
    J. Posture erect, head up, chest out, abdomen in
    K. Digestion and elimination good
    L. Appetite good
    M. Sleeps well
    N. General appearance alert and responsive

INFORMATION SHEET

VI. Factors that influence food habits

- A. Personal attitudes
  1. Likes and dislikes of foods
  2. Method of preparation
  3. Childhood training and experiences
  4. Food preferences of family and friends

     (NOTE: Diet habits are difficult to change.)
- B. Region and availability
  1. Certain areas have characteristic foods

     Examples: Boston baked beans in the northeastern states, jambalaya in Louisiana
  2. Greater variety of foods available due to increasing transportation facilities
  3. Ethnic pride in food preparation
- C. Income
  1. Lower income families spend proportionally more of their income for food
  2. Food customs are influenced by cost and availability
  3. Limited income and education affect food habits adversely
  4. Buying foods in season is an economic aid in meal planning
- D. Age
  1. Affects amount and type of food needed

     Example: Young, active persons need high energy foods more than older, less active persons
  2. Balanced diet of protein, carbohydrates, and fats needed by all ages

INFORMATION SHEET

E. Religious influence

  1. Various religions have diet restrictions

     Examples: Jewish people have many regulations concerning meat, milk, fish, and preparation of food; Seventh Day Adventists do not eat meat

  2. Restrictive food practices require special planning to assure adequate diet

F. Pregnancy and lactation

  1. Require additional nutrition

  2. Increased protein intake to provide amino acids for growth of fetus

  3. Supplementary vitamins and minerals may be prescribed

G. Nationality and race

  1. Food preparation varies from one nation to another

  2. Food production of a country or geographical area

  3. Availability and facilities for storing food

H. Mobility of population--Spreads ethnic and regional food habits more quickly

I. Increased communication

  1. Advertisements of foods and food preparation

  2. Articles concerning food and diet in publication

  3. Food programs on radio and television

VII. Basic four food groups

(NOTE: The main part of the diet should be selected from the four basic food groups. Other foods may be added to make meals more appealing and satisfying.)

A. Milk--Two servings

(NOTE: Children and pregnant women need three to four servings; teenagers and lactating mothers need four or more servings.)

INFORMATION SHEET

B. Meat--Two or more servings

C. Bread and cereal--Four or more servings

D. Fruit and vegetable--Four or more servings including one citrus

VIII. Disadvantages of food misinformation

A. Faddism appeals to the emotions and grows where there is lack of knowledge

B. Fake diagnostic machines, youth restorers, health foods, pills to cure diseases, and other worthless products waste billions of dollars annually

C. Guaranteed results by health quacks cause many to postpone obtaining medical help when needed

D. May lead to increased expenditure of money for a nutritionally poor diet

E. Bizarre weight reduction plans may seriously upset body metabolism

F. Overuse of vitamins and/or minerals may cause faulty metabolism

G. Continued use of soda or other alkaline medication may harmfully diminish the effectiveness of hydrochloric acid in the stomach

IX. Primary causes of nutritional deficiency

A. Inadequate intake due to

1. Poor food habits
2. Consumption of nutrient deficient food
3. Anorexia due to disease
4. Diarrhea
5. Alcoholism

   (NOTE: It may depress appetite.)

6. Faulty therapeutic diet
7. Lack of proper food

INFORMATION SHEET

B. Poor use of ingested food due to

1. Faulty absorption in intestinal tract

   Examples: Poor iron absorption due to achlorhydria; poor absorption of fat-soluble vitamins due to excessive use of mineral oil

2. Reduced vitamin synthesis in the intestinal tract following oral antibiotic therapy

3. Metabolic disturbances

   Example: Decreased insulin production

4. Diseases of digestive tract

5. Food allergies

X. Reasons nurses need knowledge of nutrition

A. As homemakers and/or parents to be able to select and prepare foods to maintain their own and family health

B. To teach patients

C. To help friends

D. To improve her own health and well-being

E. To increase her dependability

INTRODUCTION TO NUTRITION
UNIT XXII

ASSIGNMENT SHEET #1--CURRENT NUTRITION INTEREST

1. Bring to class an article about nutrition from a recent publication.
2. At some time during the study of nutrition prepare a report on some phase of nutrition that interests you.

INTRODUCTION TO NUTRITION
UNIT XXII

TEST

1. Match the terms on the right to the correct definition.

_____a. Food and drink consumed each day

_____b. Study of foods and their relation to health

_____c. Science of the use of foods in health and disease

_____d. Lack or loss of appetite for food

_____e. Substance that the body uses to yield energy, to build or repair tissues, and/or to regulate body processes

_____f. Absence of free hydrochloric acid in the stomach

_____g. Insufficient amount of one or more essential nutrients in the diet

_____h. Chemical compound found in food

_____i. Modifications in the patient's normal diet to meet requirements created by disease or injury

_____j. Lack of necessary food substances in the body

1. Malnutrition
2. Achlorhydria
3. Diet therapy
4. Nutrition
5. Anorexia
6. Diet
7. Nutrient
8. Dietetics
9. Food
10. Nutritional deficiency

2. List the seven classes of nutrients.

a.

b.

c.

d.

e.

f.

g.

3. List three functions of food.

a.

b.

c.

4. List six reasons good nutrition is essential.

a.

b.

c.

d.

e.

f.

5. Describe a well-nourished person.

6. Discuss six factors that influence food habits.

a.

b.

c.

d.

e.

f.

7. Name the basic four food groups and the amount of each to be eaten by the average adult each day.

   a.

   b.

   c.

   d.

8. Discuss disadvantages of food misinformation.

9. Discuss the two primary causes of nutritional deficiency.

10. Discuss reasons nurses need knowledge of nutrition.

11. Prepare a report on nutrition.

INTRODUCTION TO NUTRITION
UNIT XXII

ANSWERS TO TEST

1. a. 6
   b. 4
   c. 8
   d. 5
   e. 9
   f. 2
   g. 10
   h. 7
   i. 3
   j. 1

2. a. Carbohydrates
   b. Fats
   c. Proteins
   d. Minerals
   e. Water
   f. Vitamins
   g. Cellulose

3. Any three of the following
   a. Provides heat and energy
   b. Promotes growth
   c. Repairs tissue
   d. Regulates body processes

4. Any six of the following
   a. Promotes a healthier body and mind
   b. Provides greater personal energy and vitality
   c. Resists illness
   d. Speeds healing
   e. Produces stronger bones and muscles
   f. Promotes good posture
   g. Helps individual to feel better and sleep better
5. Description should include most or all of the following
   a. Well-developed body
   b. Average weight for height, age, and body build
   c. Muscles well developed and firm
   d. Skin smooth with healthy color
   e. Eyes bright and clear; no fatigue circles
   f. Hair smooth and glossy
   g. Facial expression alert, without strain
   h. Mucous membranes of eyes and mouth pink
   i. Teeth clean, not discolored
   j. Posture erect, head up, chest out, abdomen in
   k. Digestion and elimination good
   l. Appetite good
   m. Sleeps well
   n. General appearance alert and responsive
6. Any six of the following
   a. Personal attitudes
      1) Likes and dislikes of food
      2) Method of preparation

        3) Childhood training and experiences
        4) Food preferences of family and friends

b. Region and availability

        1) Certain areas have characteristic foods
        2) Greater variety of foods available due to increasing transportation facilities
        3) Ethnic pride in food preparation

c. Income

        1) Lower income families spend proportionally more of their income for food
        2) Food customs are influenced by cost and availability
        3) Limited income and education affect food habits adversely
        4) Buying foods in season is an economic aid in meal planning

d. Age

        1) Affects amount and types of food needed
        2) Balanced diet of protein, carbohydrates, and fats needed by all ages

e. Religious influence

        1) Various religions have diet restrictions
        2) Restrictive food practices require special planning to assure adequate diet

f. Pregnancy and lactation

        1) Require additional nutrition
        2) Increased protein intake to provide amino acids for growth of fetus
        3) Supplementary vitamins and minerals may be prescribed

g. Nationality and race

        1) Food preparation varies from one nation to another
        2) Food production of a country or geographical area
        3) Availability and facilities for storing food

h. Mobility of population--Spreads ethnic and regional food habits more quickly

i. Increased communication

1) Advertisements of foods and food preparation

2) Articles concerning food and diet in publication

3) Food programs on radio and television

7. a. Milk--Two servings

b. Meat--Two or more servings

c. Bread and cereal--Four or more servings

d. Fruit and vegetable--Four or more servings including one citrus

8. Discussion should include:

a. Faddism appeals to the emotions and grows where there is lack of knowledge

b. Fake diagnostic machines, youth restorers, health foods, pills to cure diseases, and other worthless products waste billions of dollars annually

c. Guaranteed results by health quacks cause many to postpone obtaining medical help when needed

d. May lead to increased expenditure of money for a nutritionally poor diet

e. Bizarre weight reduction plans may seriously upset body metabolism

f. Overuse of vitamins and/or minerals may cause faulty metabolism

g. Continued use of soda or other alkaline medication may harmfully diminish the effectiveness of hydrochloric acid in the stomach

9. Discussion should include:

a. Inadequate intake due to

1) Poor food habits

2) Consumption of nutrient deficient food

3) Anorexia due to disease

4) Diarrhea

5) Alcoholism

6) Faulty therapeutic diet

7) Lack of proper food

b. Poor use of ingested food due to

1) Faulty absorption in intestinal tract

2) Reduced vitamin synthesis in intestinal tract following oral antibiotic therapy

3) Metabolic disturbances

4) Diseases of the digestive tract

5) Food allergies

10. Discussion should include:

a. As homemakers and/or parents to be able to select and prepare foods to maintain their own and family health

b. To teach patients

c. To help friends

d. To improve her own health and well-being

e. To increase her dependability

11. Evaluated to the satisfaction of the instructor.

METABOLISM
UNIT XXIII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list factors that affect metabolism and energy requirements. She should be able to compute her daily calorie requirement. This knowledge will be evidenced by scoring eighty five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with metabolism to the correct definition.
2. List six factors that affect the basal metabolism rate.
3. List eight factors that affect energy requirements.
4. List steps taken to compute the calorie requirement for an individual.
5. Compute the student's daily calorie requirement and foods needed to meet that requirement.

METABOLISM
UNIT XXIII

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Assist students in completing assignment sheet.

   F. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Complete assignment sheet.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Assignment Sheet #1--Computing Calorie Requirement

   D. Test

   E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Howe, Phyllis S. *Basic Nutrition in Health and Disease.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

C. Mowry, Lillian and Sue R. Williams. *Basic Nutrition and Diet Therapy for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1969.

METABOLISM
UNIT XXIII

INFORMATION SHEET

I. Terms and definitions

  A. Metabolism--Chemical process in organisms which turns food substances into heat and energy for body use

  B. Anabolism--Building, maintaining, and repairing tissue

  C. Catabolism--Breaking down complex substances into simple substances for excretion and energy production

  D. Basal metabolism rate--Measurement of oxygen needed when the body is at rest and performing only necessary functions

  E. Calorie--Unit used to measure fuel value of food

  F. Basal metabolism--Amount of energy needed to sustain life

II. Factors which affect the basal metabolism rate; BMR

  A. Internal secretions

  (NOTE: Secretions of the thyroid and adrenal glands affect basal metabolism rate. Usually hyperthyroidism causes an increase, and hypothyroidism causes a decrease in rate. An emotional state that stimulates secretions of the endocrine glands could increase the rate of body processes and give an incorrect reading in the BMR test.)

  B. Age

  (NOTE: Children have a higher BMR than adults. In older persons there is a marked decrease.)

  C. Body shape and size

  (NOTE: A tall, thin person has a higher BMR than a short, fat person.)

  D. Sex

  (NOTE: Women have a lower BMR than men.)

  E. Fear of the test

  (NOTE: Patient must be assured by nurse or other personnel that test is not dangerous or upsetting.)

INFORMATION SHEET

F. Adequate rest, no food for twelve hours prior to test

(NOTE: Provision must be made for patient to have a restful night and to restrict food and drink for the designated time prior to the test.)

III. Factors that affect energy requirements

A. Physical activity

B. Age

C. Size

D. Sex

E. Endocrine secretions

F. Body temperature

G. Medications

H. Emotions

I. External climate

J. Sleep

K. Nutrition

L. Pregnancy

IV. Computing calorie requirement

A. Determine ideal weight

(NOTE: Tables giving desirable weights for adults are usually found in nutrition textbooks.)

B. Determine calories needed

(NOTE: A moderately active woman needs 18 calories per pound, a moderately active man needs 20.5 calories per pound, and a man doing strenuous labor may need up to 28 calories per pound of ideal weight.)

C. Multiply the ideal weight by calories needed to determine daily calorie requirement

Example: Ideal weight of woman 125 pounds
X18 calories
2,250 calories per day

METABOLISM
UNIT XXIII

ASSIGNMENT SHEET #1--COMPUTE CALORIE REQUIREMENT

1. Compute your daily calorie requirement as a nurse.
2. Using a calorie counter or food table chart giving caloric value, determine the number of servings of each of the basic four food groups you should eat daily.
3. Compare your findings with a record of your food intake for a five day period. Did your diet include the basic four foods? How does the calorie count of your diet compare with your estimated requirement from question 1? Does your diet need to be improved?

METABOLISM
UNIT XXIII

TEST

1. Match the terms on the right to the correct definition.

______a. Breaking down complex substances into simple substances for excretion and energy production

______b. Measurement of oxygen needed when the body is at rest and performing only necessary functions

______c. Chemical process in organisms which turns food substances into heat and energy for body use

______d. Building, maintaining, and repairing tissue

______e. Unit used to measure fuel value of food

______f. Amount of energy needed to sustain life

1. Anabolism
2. Basal metabolism
3. Catabolism
4. Metabolism
5. Calorie
6. Basal metabolism rate

2. List six factors that affect the basal metabolism rate.

a.

b.

c.

d.

e.

f.

3. List eight factors that affect energy requirements.

a.

b.

c.

d.

e.

f.

g.

h.

4. List steps taken to compute the calorie requirement for an individual.

   a.

   b.

   c.

5. Compute the student's daily calorie requirement and foods needed to meet that requirement.

   (NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

METABOLISM
UNIT XXIII

ANSWERS TO TEST

1. a. 3
   b. 6
   c. 4
   d. 1
   e. 5
   f. 2
2. a. Internal secretions
   b. Age
   c. Body shape and size
   d. Sex
   e. Fear of the test
   f. Adequate rest, no food for twelve hours prior to the test
3. Any eight of the following
   a. Physical activity
   b. Age
   c. Size
   d. Sex
   e. Endocrine secretions
   f. Body temperature
   g. Medications
   h. Emotions
   i. External climate
   j. Sleep

    k. Nutrition

    l. Pregnancy

4. a. Determine ideal weight

    b. Determine calories needed

    c. Multiply the ideal weight by calories needed to determine daily calorie requirement.

5. Evaluated to the satisfaction of the instructor.

CARBOHYDRATES, PROTEINS, AND FATS
UNIT XXIV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list sources and functions of carbohydrates, proteins, and fats. She should be able to describe kinds of protein and sources of fat and discuss cholesterol and effects of excess fat in the diet. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with carbohydrates, proteins, and fats to the correct definition.
2. List four principal sources of carbohydrates.
3. List five functions of carbohydrates.
4. List three effects of excess carbohydrates in the diet.
5. List five functions of proteins.
6. Describe the two kinds of protein giving three sources of each.
7. List two sources of fat in the diet giving two examples of each.
8. Explain the difference between saturated and unsaturated fats.
9. List eight functions of fats.
10. Explain the term "essential fatty acids."
11. Discuss cholesterol.
12. List three foods high in cholesterol and three low in cholesterol.
13. Discuss the effects of excess fats in the diet.
14. List the number of calories in one gram of carbohydrate, protein, and fat.
15. List the percentage of the daily diet that should be carbohydrate, protein, and fat.
16. Compute carbohydrate content.
17. Demonstrate the ability to make a poster or display concerning food.

CARBOHYDRATES, PROTEINS, AND FATS
UNIT XXIV

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information, job, and assignments sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. Assist students in completing assignment sheet.

  F. Demonstrate and discuss procedures outlined in the job sheet.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Complete assignment sheet.

  E. Demonstrate the ability to accomplish the procedures outlined in the job sheet.

  F. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Assignment Sheet #1-Compute Carbohydrate Content

  D. Job Sheet #1-Make A Food Poster or Display

  E. Test

  F. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Howe, Phyllis S. *Basic Nutrition in Health and Disease.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

C. Mowry, Lillian and Sue R. Williams. *Basic Nutrition and Diet Therapy for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1969.

D. Townsend, Carolynn E. *Nutrition and Diet Modifications for the Nurse.* Albany, New York: Delmar Publishers, 1972.

CARBOHYDRATES, PROTEINS, AND FATS
UNIT XXIV

INFORMATION SHEET

I. Terms and definitions

A. Carbohydrates--Chemical compounds of carbon, hydrogen, and oxygen; starches and sugars

B. Proteins--Complex organic compounds containing carbon, hydrogen, oxygen, nitrogen, usually sulfur, and sometimes iron, phosphorus, iodine, and copper

C. Fats--Combination of fatty acids and glycerol containing the elements carbon, hydrogen, and oxygen

(NOTE: Fats contain the same elements as carbohydrates but in different proportions.)

D. Amino acids--Chemical compounds which are components of proteins

E. Hydrochloric acid--Normal constituent of gastric juices produced by glands in the stomach

F. Lipid--Oily substance not soluble in water

G. Rancid--Applied to fats that have undergone decomposition with the liberation of fatty acids

H. Hydrogenation--Addition of hydrogen to unsaturated fats to make a saturated fat

I. Dental caries--Gradual decay of the enamel and dentin of a tooth

J. Oxidation--Combining with oxygen

K. Synthesis--Combining of simple substances to form compounds

L. Gram--Metric unit of weight

(NOTE: A gram is approximately equal to fifteen grains.)

M. Obesity--Abnormal amount of fat in the body

II. Principal sources of carbohydrates

A. Grains and grain products including bread, cereals, macaroni products

INFORMATION SHEET

B. Sugar and sugar products, honey, corn syrup, molasses, candy

C. Vegetables such as potatoes, corn, peas, beans

D. Fruits such as bananas, apples, pears

E. Milk and dairy products

III. Functions of carbohydrates

A. Provide an economical and quick source of calories

B. Produce heat and energy

C. Aid in efficient and complete oxidation of fats

(NOTE: Otherwise, ketones are formed.)

D. Decrease oxidation of protein for energy purposes

(NOTE: When insufficient carbohydrate for energy is available, the body breaks down tissue fats and protein.)

E. Provide glucose, the only source of energy for nerve tissue

F. Provide lactose

(NOTE: Lactose encourages the growth of favorable intestinal bacteria, has laxative properties, and enhances the absorption of calcium.)

IV. Effects of excess carbohydrate in the diet

A. Increases incidence of dental caries

B. Causes obesity

C. May irritate gastrointestinal tract

D. Depresses the appetite

(NOTE: If empty calorie food instead of the basic four is consumed, malnutrition could result. Empty calorie foods are those with little or no food value except calories. These include refined sugar, alcohol, soft drinks, some cooking fats, and some refined cereals.)

INFORMATION SHEET

V. Functions of proteins

- A. Build and repair tissues
- B. Normal constituent of all body fluids except bile and urine
- C. Maintain water balance
- D. Help make body secretions, enzymes, hormones, and milk
- E. Help form antibodies
- F. Combine with iron to form hemoglobin
- G. Carry needed vitamins and minerals

VI. Kinds of protein

- A. Complete proteins
  1. Contain all the essential amino acids; will build and repair tissues
  2. Found in meat, fish, poultry, eggs, milk, and cheese
- B. Incomplete proteins
  1. Contain only part of the essential amino acids; cannot maintain life or support growth by themselves
  2. Found in gelatin, cereals, nuts, peanuts, and vegetables such as corn, peas, and beans

     (NOTE: Soybeans are considered a complete protein but lack sufficient amounts of amino acids.)

VII. Sources of fat in the diet

- A. Visible
  1. Readily observed and used as fat
  2. Found in butter, margarine, cooking oils, and visible fats in meats

INFORMATION SHEET

B. Invisible

1. Hidden in foods

2. Found in meat, milk and dairy products, egg yolk, fish, chocolate, nuts, and baked products

(NOTE: After visible fat is removed from meat, the remainder is approximately six percent hidden fat.)

VIII. Kinds of fat

A. Saturated

1. Each carbon atom in the fatty acid carries all the hydrogen atoms possible

2. Usually solid at room temperature

3. Oily fats can be converted to solid fats by hydrogenation

(NOTE: Saturated fats are found in meat, eggs, dairy products, hydrogenated fats, and chocolate.)

B. Unsaturated

1. Has one or more places where hydrogen can be added

(NOTE: Monounsaturated fat has one place and polyunsaturated fat has two or more places where hydrogen can be added. Margarine and many common shortenings are prepared in this way.)

2. Liquid at room temperature

(NOTE: Unsaturated fats are found in vegetable oils such as cottonseed, soybean, corn, olive, peanut, and safflower and in the fat of fish.)

IX. Functions of fats

A. Supply heat-energy

(NOTE: Any tissue, except nervous, can utilize fat as a source of energy.)

B. Act as insulation

C. Provide padding to protect vital organs

(NOTE: Excessive fat around vital organs interferes with function.)

INFORMATION SHEET

   D. Carry fat-soluble vitamins A, D, E, and K

   E. Essential for maintenance of body functions

   F. Decrease vitamin B_1 requirement

   (NOTE: When fat consumption is adequate, less B_1 is needed.)

   G. Slow digestion in stomach

   (NOTE: A fatty meal remains in the stomach longer and prevents quick return of the feeling of hunger.)

   H. Add flavor to many foods, increasing taste appeal

   (NOTE: Excess use of fats may conceal natural flavor of foods.)

   I. Spare protein from being burned for energy

   J. Supply cholesterol

X. Essential fatty acids

   A. Needed for normal cells and metabolism

   B. Cannot be manufactured by the body

   C. Reduced in a fat by hydrogenation

   D. Found in egg yolks, butter, meat, and vegetable oils such as olive, corn, cottonseed, and soybean

XI. Cholesterol

   A. Normal component of the blood and all body cells, especially brain and nerve tissue

   B. Precursor of vitamin D and of the adrenal and sex (gonadal) hormones

   (NOTE: A precursor is a substance which the body converts into another more useable substance.)

   C. Manufactured by the body from food

   D. Excess may cause atherosclerosis, deposits of cholesterol and blood plasma on the walls of blood vessels

XII. Cholesterol content of foods

   A. Highest

      1. Organ meats--Brains, liver, and kidney

      2. Shellfish--Lobster, oysters, shrimp

INFORMATION SHEET

3. Egg yolk
4. Animal fat

B. Lowest

1. Fruits and vegetables
2. Breads and cereals
3. Skim milk, buttermilk, uncreamed cottage cheese
4. Jelly, syrup, and sugar
5. Egg white
6. Vegetable fat, peanut butter

XIII. Effects of excess fats in the diet

A. Cause obesity

B. Abnormally decrease digestion and absorption of food products

C. Interfere with the absorption of calcium by forming an insoluble soap that will not diffuse through the intestinal wall

D. Cause ketosis unless adequate carbohydrate is present to oxidize fats

E. Increase surgical risk

F. Increase incidence of cerebral damage, heart disease, diabetes mellitus, and kidney failure

XIV. Calories in one gram of carbohydrate, protein, and fat

A. Carbohydrate--Four

B. Protein--Four

C. Fat--Nine

XV. Percentages needed in the daily diet

A. Carbohydrate--Forty to fifty percent

B. Protein--Ten to fifteen percent

C. Fat--Twenty-five to thirty percent

(NOTE: Most Americans have a fat intake of forty percent. In countries where fat intake is around twenty percent and more unsaturated fats are used, the incidence of atherosclerosis is less.)

CARBOHYDRATES, PROTEINS, AND FATS
UNIT XXIV

ASSIGNMENT SHEET = 1 COMPUTE CARBOHYDRATE CONTENT

Using a record of your food intake from the Assignment Sheet #1 of Unit XXIII Metabolism:

1. Calculate the carbohydrate caloric content of your diet.

2. What percentage of the total calories was derived from carbohydrates?

3. What percentage was derived from cereals and breads? from cakes, pies and other baked sweets? from sugar, candy and carbonated beverages?

4. What improvements can you suggest for the selection of carbohydrates in your diet?

CARBOHYDRATES, PROTEINS, AND FATS
UNIT XXIV

JOB SHEET #1--MAKE A FOOD POSTER OR DISPLAY

I. Equipment needed

   A. Magazines with pictures of different kinds of people

   B. Scissors

   C. Paste or glue

   D. Heavy paper or poster board

   E. Felt-tip pens for lettering

   F. Other equipment as needed for individual creativity

II. Procedure--Working in groups of three or four, prepare a food poster or display using one of the following subjects:

   A. Principal sources of carbohydrates

   B. Snack foods that are nutritious and those that are mostly "empty" calories

   C. Sources of incomplete proteins

   D. Sources of complete proteins

   E. Foods containing visible fats

   F. Foods containing invisible fats

   G. Basic four food groups (on one poster or on four separate posters)

   (NOTE: Another subject may be selected with the approval of the instructor.)

CARBOHYDRATES, PROTEINS, AND FATS
UNIT XXIV

TEST

1. Match the terms on the right to the correct definition.

______a. Combining with oxygen

______b. Chemical compounds of carbon, hydrogen, and oxygen; starches and sugars

______c. Addition of hydrogen to unsaturated fats to make a saturated fat

______d. Chemical compounds which are components of proteins

______e. Applied to fats that have undergone decomposition with the liberation of fatty acids

______f. Metric unit of weight

______g. Gradual decay of the enamel and dentin of a tooth

______h. Combination of fatty acids and glycerol containing the elements carbon, hydrogen, and oxygen

______i. Normal constituent of gastric juices produced by glands in the stomach

______j. Complex organic compounds containing carbon, hydrogen, oxygen, nitrogen, usually sulfur, and sometimes iron, phosphorus, iodine, and copper

1. Hydrochloric acid
2. Lipid
3. Rancid
4. Fats
5. Amino acids
6. Proteins
7. Oxidation
8. Gram
9. Obesity
10. Carbohydrates
11. Synthesis
12. Dental caries
13. Hydrogenation

______k. Oily substance not soluble in water

______l. Abnormal amount of fat in the body

______m. Combining of simple substances to form compounds

2. List four principal sources of carbohydrates.

a.

b.

c.

d.

3. List five functions of carbohydrates.

a.

b.

c.

d.

e.

4. List three effects of excess carbohydrates in the diet.

a.

b.

c.

5. List five functions of proteins.

a.

b.

c.

d.

e.

6. Describe the two kinds of protein giving three sources of each.

   a.

   b.

7. List two sources of fat in the diet giving two examples of each.

   a.

   b.

8. Explain the difference between saturated and unsaturated fats.

9. List eight functions of fats.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

10. Explain the term "essential fatty acids."

11. Discuss cholesterol.

12. List three foods high in cholesterol and three low in cholesterol.

    a. Highest

        1)

        2)

        3)

    b. Lowest

        1)

        2)

        3)

13. Discuss the effects of excess fats in the diet.

14. List the number of calories in one gram of:

    a. Carbohydrate

    b. Fat

    c. Protein

15. List the percentage of the daily diet that should be:
    a. Protein
    b. Fat
    c. Carbohydrate
16. Compute carbohydrate content.
17. Demonstrate the ability to make a poster or display concerning food.

(NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

CARBOHYDRATES, PROTEINS, AND FATS
UNIT XXIV

ANSWERS TO TEST

1. a. 7
   b. 10
   c. 13
   d. 5
   e. 3
   f. 8
   g. 12
   h. 4
   i. 1
   j. 6
   k. 2
   l. 9
   m. 11

2. Any four of the following

   a. Grains and grain products including bread, cereals, macaroni products

   b. Sugar and sugar products, honey, corn syrup, molasses, candy

   c. Vegetables such as potatoes, corn, peas, beans

   d. Fruits such as bananas, apples, pears

   e. Milk and dairy products

3. Any five of the following

   a. Provide an economical and quick source of calories

   b. Produce heat and energy

   c. Aid in efficient and complete oxidation of fats

   d. Decrease oxidation of protein for energy purposes

   e. Provide glucose, the only source of energy for nerve tissue

   f. Provide lactose

4. Any three of the following

   a. Increases incidence of dental caries

   b. Causes obesity

   c. May irritate gastrointestinal tract

   d. Depresses the appetite

5. Any five of the following
   a. Build and repair tissues
   b. Normal constituent of all body fluids except bile and urine
   c. Maintain water balance
   d. Help make body secretions, enzymes, hormones, and milk
   e. Help form antibodies
   f. Combine with iron to form hemoglobin
   g. Carry needed vitamins and minerals

6. Description should include:
   a. Complete proteins contain all the essential amino acids and will build and repair tissues; any three of the following: meat, fish, poultry, eggs, milk, cheese
   b. Incomplete proteins contain only part of the essential amino acids and cannot maintain life or support growth by themselves; any three of the following: gelatin, cereals, nuts, peanuts, vegetables such as corn, peas, and beans

7. a. Visible; any two of the following: butter, margarine, cooking oils, visible fat in meats
   b. Invisible; any two of the following: meat, milk and dairy products, egg yolks, fish, chocolate, nuts, baked products

8. Explanation should include:
   a. Saturated fats
      1) Each carbon atom in the fatty acid carries all the hydrogen atoms possible
      2) Usually solid at room temperature
      3) Oily fats can be converted to solid fats by hydrogenation
   b. Unsaturated fats
      1) Has one or more places where hydrogen can be added
      2) Liquid at room temperature

9. Any eight of the following

   a. Supply heat-energy

   b. Act as insulation

   c. Provide padding to protect vital organs

   d. Carry fat-soluble vitamins A, D, E, and K

   e. Essential for maintenance of body functions

   f. Decrease vitamin B_1 requirement

   g. Slow digestion in the stomach

   h. Add flavor to many foods, increasing taste appeal

   i. Spare protein from being burned for energy

   j. Supply cholesterol

10. Explanation should include:

    a. Needed for normal cells and metabolism

    b. Cannot be manufactured by the body

    c. Reduced in a fat by hydrogenation

    d. Found in egg yolks, butter, meat, and vegetable oils such as olive, corn, cottonseed, and soybean

11. Discussion should include:

    a. Normal component of the blood and all body cells, especially brain and nerve tissue

    b. Precursor of vitamin D and of the adrenal and sex (gonadal) hormones

    c. Manufactured by the body from food

    d. Excess may cause artherosclerosis, deposits of cholesterol and blood plasma on the walls of blood vessels

12. Any three of each of the following groups

    a. Highest

       1) Organ meats--Brains, liver, and kidney

       2) Shellfish--Lobster, oysters, shrimp

        - 3) Egg yolk
        - 4) Animal fat
    - b. Lowest
        - 1) Fruits and vegetables
        - 2) Breads and cereals
        - 3) Skim milk, buttermilk, uncreamed cottage cheese
        - 4) Jelly, syrup, and sugar
        - 5) Egg white
        - 6) Vegetable fat, peanut butter

13. Discussion should include:
    - a. Cause obesity
    - b. Abnormally decrease digestion and absorption of food products
    - c. Interfere with the absorption of calcium by forming an insoluble soap that will not diffuse through the intestinal wall
    - d. Cause ketosis unless adequate carbohydrate is present to oxidize fats
    - e. Increase surgical risk
    - f. Increase incidence of cerebral damage, heart disease, diabetes mellitus, and kidney failure

14. a. Four
    - b. Nine
    - c. Four

15. a. Ten to fifteen percent
    - b. Twenty-five to thirty percent
    - c. Forty to fifty percent

16. Evaluated to the satisfaction of the instructor.

17. Performance skills will be evaluated to the satisfaction of the instructor.

VITAMINS AND MINERALS
UNIT XXV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list functions, characteristics, sources, and deficiency symptoms of specified vitamins and minerals. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with vitamins and minerals to the correct definition.
2. List five body functions that vitamins help regulate.
3. List four general characteristics of vitamins.
4. Name two classes of vitamins and two vitamins for each class.
5. List functions, deficiency symptoms, and sources of selected vitamins.
6. List five functions of minerals.
7. List six functions of calcium.
8. List two sources of calcium.
9. List three symptoms of calcium deficiency.
10. List three functions of phosphorus.
11. List four sources of phosphorus.
12. List the function and three sources of iron.
13. List three factors that retard absorption of iron.
14. List the function and two sources of iodine.
15. List three functions and three sources of sodium and potassium.
16. List five additional trace minerals.
17. Discuss the role of vitamins and minerals in the daily diet.

VITAMINS AND MINERALS
UNIT XXV

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Have each student select an advertisement from any source for a food or food supplement. Have each student determine whether the food or food supplement provides safe nourishment, is necessary for good health, and is an economical source of nutrients.

   F. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Determine value of a food or food supplement.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Test

   D. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Howe, Phyllis S. *Basic Nutrition in Health and Disease.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

C. Mowry, Lillian and Sue R. Williams. *Basic Nutrition and Diet Therapy for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1969.

D. Townsend, Carolynn E. *Nutrition and Diet Modifications for the Nurse.* Albany, New York: Delmar Publishers, 1972.

E. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

VITAMINS AND MINERALS
UNIT XXV

INFORMATION SHEET

I. Terms and definitions

   A. Vitamins--Chemical compounds needed in very small amounts for various body processes

   B. Avitaminosis--Disease due to lack of vitamins in the diet

   C. Hypervitaminosis--Toxicity caused by an excessive amount of one or more vitamins

   D. Minerals--Essential elements which comprise four percent of the total weight of the body

   E. Intrinsic factor--Mucoprotein found in gastric juice; necessary for the assimilation of vitamin B_{12}

   F. Rickets--Softened bone condition in children resulting from deficient deposits of calcium in bone-forming cartilages

   G. Pellagra--Deficiency disease due to insufficient niacin and protein with dermatitis, diarrhea, anemia, and mental symptoms

   H. Scurvy--Deficiency characterized by loss of energy, pain in limbs, weakness, and anemia

II. Functions of vitamins--Regulation of body functions including

   A. Digestion

   B. Cell metabolism

   C. Growth and development

   D. Reproduction

   E. General good health

   F. Appetite

   G. Resistance

III. General characteristics of vitamins

   A. Some are lost by exposure to air and in storage of food

   B. Water-soluble vitamins may be lost in cooking

INFORMATION SHEET

C. High temperatures destroy vitamins

D. In some foods vitamins are found chiefly in the part usually discarded such as outer leaves of lettuce and peelings

E. Sufficient fats are needed to provide a vehicle for fat-soluble vitamins

IV. Classes of vitamins

A. Fat-soluble

1. Vitamin A
2. Vitamin D
3. Vitamin E
4. Vitamin K

B. Water-soluble

1. Vitamin C
2. B-complex vitamins--Thiamine, riboflavin, niacin, biotin, folic acid, pyridoxine, cobalamin

V. Functions, deficiency symptoms, and sources of

A. Fat-soluble vitamins

B. Water-soluble vitamins

(NOTE: See charts.)

A. FAT-SOLUBLE VITAMINS

Vitamin	Functions	Deficiency Symptoms	Sources
A	Essential for Growth Health of eyes Health of skin and mucous membranes	Night blindness Increased susceptibility to infection Changes in skin and mucous membranes	Liver, liver sausage Butter, fortified margarine Whole milk, cream, cheese Egg yolk Green and yellow vegetables Yellow fruits Fish liver oils
D	Essential for Normal bone growth Regulating calcium and phosphorus metabolism Normal growth of teeth	Rickets Soft bones Poor teeth Lowered blood calcium and phosphorus Poor posture	Sunshine Fish liver oils Vitamin D milk Egg yolk Liver
E	May affect red blood cells May protect muscle tissue May help metabolism of polyunsaturated fats	Increased rate of hemolysis of red blood cells	Wheat germ Vegetable oils Egg yolk Nuts Dark green, leafy vegetables
K	Essential for normal clotting of blood	Slow clotting of blood Hemorrhagic disease in newborn	Green leafy vegetables Cauliflower, cabbage Pork liver

B. WATER-SOLUBLE VITAMINS

Vitamin	Functions	Deficiency Symptoms	Sources
Thiamine B_1	Essential for Carbohydrate metabolism Healthy appetite Nerve function	Anorexia Fatigue Nerve disorders Impaired carbohydrate metabolism	Meat, especially pork Whole-grain and enriched cereals Yeast Legumes, especially soy beans Organ meats, especially liver
Riboflavin B_2	Essential for Oxidation Health of skin and mouth Healthy eyes Metabolism of food	Loss of weight and appetite Eye sensitivity, visual defects Inflammation of lips, tongue Digestive disturbances	Milk, dairy foods Enriched bread and cereals Organ meats Green leafy vegetables Brewer's yeast
Niacin (Nicotinic acid)	Essential for Prevention of pellagra Metabolism of food	Fatigue Sore mouth and tongue Diarrhea and nausea Nervous disorders Anorexia Pellagra	Organ meats Poultry and fish Yeast Enriched breads and cereals Peanuts
Pyridoxine B_6	Essential for metabolism of proteins	Anemia Kidney stones Dermatitis Nausea and vomiting Irritability	Whole-grain cereals Meat, especially organ meats Soybeans Peanuts
Cobalamin B_{12}	Essential for Metabolism Healthy red cells Treatment of pernicious anemia	Sore tongue Signs of spinal cord degeneration Growth retardation	Lean meat Organ meats Eggs Dairy products
C	Essential for Healthy teeth, gums Healing of wounds Metabolism of food	Sore gums Stiff, aching joints Tendency to bruise easily Susceptibility to disease Scurvy	Citrus fruits Potatoes Tomatoes Raw vegetables Carrots

INFORMATION SHEET

VI. Functions of minerals

   A. Constituents of bones and teeth

   B. Aid in maintenance of nerve and muscle action

   C. Maintain acid-base balance

   D. Combine with organic compounds to form hormones

   E. Aid in controlling water balance

   F. Help utilize nutrients

VII. Functions of calcium

   A. Involved in muscle contraction and relaxation

   (NOTE: In the absence of calcium, muscles lose their ability to contract.)

   B. Maintenance of regular contractions of heart muscle

   C. Aids in coagulation of blood

   D. Aids in transmission of nerve impulses

   E. Affects cell wall permeability

   F. Activates certain enzymes

   (NOTE: Calcium activates lipase, the enzyme that metabolizes fats, and adenosine triphosphate or ATP which supplies energy to cells to function.)

   G. Maintains acid-base balance

   H. Aids in efficient utilization of iron

VIII. Sources of calcium

   A. Milk and milk products

   B. Egg yolks

   C. Green leafy vegetables

IX. Symptoms of calcium deficiency

   A. In bones

      1. Rickets-Poor bone formation in children

      2. Osteomalacia-Softening of the bones in adults

INFORMATION SHEET

- B. Malformed or decaying teeth
- C. Slow clotting of blood
- D. Damage to teeth and bones before and after pregnancy
- E. Tetany

X. Functions of phosphorus

- A. Constituent of calcium phosphate in bones
- B. Part of the nucleus of every body cell
- C. Aids in acid-base maintenance
- D. Aids in metabolism of fats and carbohydrates
- E. Aids in activity of some enzymes

  (NOTE: Phosphorus is an important component of phospholipids, enzymes which are involved in the emulsification and transport of fats.)

XI. Sources of phosphorus

- A. Milk and milk products
- B. Egg yolk
- C. Whole grains
- D. Meat, fish, and poultry
- E. Legumes
- F. Nuts

XII. Function and sources of iron

- A. Primary function--Forms hemoglobin
- B. Sources
  1. Organ meats, especially liver
  2. Lean red meat
  3. Legumes

INFORMATION SHEET

4. Green leafy vegetables, potatoes, and tomatoes
5. Whole-grain and enriched cereals
6. Egg yolks
7. Peaches, apricots, prunes, and raisins

XIII. Factors that retard absorption of iron

A. Insufficient hydrochloric acid in stomach and duodenum

B. Excessive use of soda or alkaline medications

C. Decreased absorption due to diarrhea

D. Deficiency of copper

E. Deficiency of ascorbic acid

XIV. Function and sources of iodine

A. Function--Formation of thyroid hormone which regulates rate of metabolism

B. Sources

1. Iodized salt
2. Ocean fish and shellfish

XV. Functions and sources of sodium and potassium

A. Functions--Regulation of

1. Acid-base balance
2. Cell permeability
3. Nerve irritability
4. Water balance
5. Osmotic pressure

B. Sources

1. Table salt
2. Baking powder and baking soda
3. Dairy products

INFORMATION SHEET

4. Meat
5. Whole grains
6. Fruits such as oranges, bananas, and apricots

(NOTE: Most foods contain sodium and potassium.)

XVI. Other trace minerals

(NOTE: Many other trace elements are found in the body and are adequately supplied by a nutritious diet. Taken in large amounts, these minerals can produce toxic effects.)

A. Fluorine

(NOTE: It increases resistance to dental caries.)

B. Copper

(NOTE: It serves as a catalyst for iron metabolism.)

C. Manganese

(NOTE: It influences blood formation and endocrine gland function.)

D. Zinc

(NOTE: It is a component of insulin and enzymes.)

E. Cobalt

(NOTE: It is a component of Vitamin B_{12}.)

F. Sulfur

(NOTE: It is a component of saliva, bile, and insulin.)

G. Magnesium

(NOTE: It is necessary for metabolism, bones, muscles, nerves, and organs.)

XVII. Vitamins and minerals in the daily diet

A. Have no caloric value

B. Regulate metabolism and are essential to life

C. Vitamins A and D are the only ones stored in the body

INFORMATION SHEET

D. Both water-soluble vitamins and minerals can be lost through cooking

(NOTE: They dissolve in the liquid used for cooking and are discarded. To preserve more of these essential elements, cook foods as short a time as possible.)

E. Well-balanced diet including the basic four food groups provides sufficient vitamins and minerals for the majority of people

F. Vitamins and minerals will not relieve a physical illness unless the condition was specifically caused by a lack of that particular vitamin or mineral

VITAMINS AND MINERALS
UNIT XXV

TEST

1. Match the terms on the right to the correct definition.

_____a. Deficiency disease due to insufficient niacin and protein with dermatitis, diarrhea, anemia, and mental symptoms

_____b. Disease due to lack of vitamins in the diet

_____c. Softened bone condition in children resulting from deficient deposits of calcium in bone-forming cartilages

_____d. Toxicity caused by an excessive amount of one or more vitamins

_____e. Essential elements which comprise four percent of the total weight of the body

_____f. Mucoprotein found in gastric juice; necessary for the assimilation of vitamin B_{12}

_____g. Deficiency characterized by loss of energy, pain in limbs, weakness, and anemia

_____h. Chemical compounds needed in very small amounts for various body processes

1. Rickets
2. Intrinsic factor
3. Vitamins
4. Pellagra
5. Hypervitaminosis
6. Scurvy
7. Minerals
8. Avitaminosis

2. List five body functions that vitamins help regulate.

a.

b.

c.

d.

e.

3. List four general characteristics of vitamins.

a.

b.

c.

d.

4. Name two classes of vitamins and two vitamins for each class.

a.

1)

2)

b.

1)

2)

5. List one function, deficiency symptom, and source for each of the following vitamins.

Vitamin	Function	Deficiency Symptom	Source
A			
D			
C			
Thiamine			
Riboflavin			
Niacin			

6. List five functions of minerals.

a.

b.

c.

d.

e.

7. List six functions of calcium.

a.

b.

c.

d.

e.

f.

8. List two sources of calcium.

a.

b.

9. List three symptoms of calcium deficiency.

a.

b.

c.

10. List three functions of phosphorus.

a.

b.

c.

11. List four sources of phosphorus.

a.

b.

c.

d.

12. List the function and three sources of iron.
    a. Function
    b. Sources
        1)
        2)
        3)
13. List three factors that retard absorption of iron.
    a.
    b.
    c.
14. List the function and two sources of iodine.
    a. Function
    b. Sources
        1)
        2)
15. List three functions and three sources of sodium and potassium.
    a. Functions
        1)
        2)
        3)
    b. Sources
        1)
        2)
        3)
16. List five additional trace minerals.
    a.
    b.

c.

d.

e.

17. Discuss the role of vitamins and minerals in the daily diet.

VITAMINS AND MINERALS
UNIT XXV

ANSWERS TO TEST

1.
   - a. 4
   - b. 8
   - c. 1
   - d. 5
   - e. 7
   - f. 2
   - g. 6
   - h. 3

2. Any five of the following
   - a. Digestion
   - b. Cell metabolism
   - c. Growth and development
   - d. Reproduction
   - e. General good health
   - f. Appetite
   - g. Resistance

3. Any four of the following
   - a. Some are lost by exposure to air and in storage of food
   - b. Water-soluble vitamins may be lost in cooking
   - c. High temperatures destroy vitamins
   - d. In some foods vitamins are found chiefly in the part usually discarded such as outer leaves of lettuce and peelings
   - e. Sufficient fats are needed to provide a vehicle for fat-soluble vitamins

4. a. Water-soluble vitamins

   Any two of the following
   - 1) Thiamine
   - 2) Riboflavin
   - 3) Niacin
   - 4) Biotin
   - 5) Folic acid
   - 6) Pyridoxine
   - 7) Cobalamin
   - 8) Vitamin C

   b. Fat-soluble vitamins

   Any two of the following
   - 1) Vitamin A
   - 2) Vitamin D
   - 3) Vitamin E
   - 4) Vitamin K

5. Answer should include one function, one deficiency symptom, and one source for each vitamin on the following table.

Vitamin	Functions	Deficiency Symptoms	Sources
A	Essential for Growth Health of eyes Health of skin and mucous membranes	Night blindness Increased susceptibility to infection Changes in skin and mucous membranes	Liver, liver sausage Butter, fortified margarine Whole milk, cream, cheese Egg yolk Green and yellow vegetables Yellow fruits Fish liver oils
D	Essential for Normal bone growth Regulating calcium and phosphorus metabolism Normal growth of teeth	Rickets Soft bones Poor teeth Lowered blood calcium and phosphorus Poor posture	Sunshine Fish liver oils Vitamin D milk Egg yolk Liver
C	Essential for Healthy teeth, gums Healing of wounds Metabolism of food	Sore gums Stiff, aching joints Tendency to bruise easily Susceptibility to disease Scurvy	Citrus fruits Potatoes Tomatoes Raw vegetables Carrots
Thiamine B_1	Essential for Carbohydrate metabolism Healthy appetite Nerve function	Anorexia Fatigue Nerve disorders Impaired carbohydrate metabolism	Meat, especially pork Whole grain and enriched cereals Yeast Legumes, especially soy beans Organ meats, especially liver
Riboflavin B_2	Essential [illegible] Oxidatio[illegible] Health of skin and mouth Healthy eyes Metabolism of food	Loss of weight and appetite Eye sensitivity, visual defects Inflammation of lips, tongue Digestive disturbances	Milk, dairy foods Enriched bread and cereals Organ meats Green leafy vegetables Brewer's yeast
Niacin (Nicotinic acid)	Essential for Prevention of pellagra Metabolism of food	Fatigue Sore mouth and tongue Diarrhea and nausea Nervous disorders Anorexia Pellagra	Organ meats Poultry and fish Yeast Enriched breads and cereals Peanuts

6. Any five of the following
   a. Constituents of bones and teeth
   b. Aid in maintenance of nerve and muscle action
   c. Maintain acid-base balance
   d. Combine with organic compounds to form hormones
   e. Aid in controlling water balance
   f. Help utilize nutrients
7. Any six of the following
   a. Involved in muscle contraction and relaxation
   b. Maintenance of regular contractions of heart muscle
   c. Aids in coagulation of blood
   d. Aids in transmission of nerve impulses
   e. Affects cell wall permeability
   f. Activates certain enzymes
   g. Maintains acid-base balance
   h. Aids in efficient utilization of iron
8. Any two of the following
   a. Milk and milk products
   b. Egg yolks
   c. Green leafy vegetables
9. Any three of the following
   a. In bones
      1) Rickets--Poor bone formation in children
      2) Osteomalacia--Softening of the bones in adults
   b. Malformed or decaying teeth
   c. Slow clotting of blood
   d. Damage to teeth and bones before and after pregnancy
   e. Tetany

10. Any three of the following
    - a. Constituent of calcium phosphate in bones
    - b. Part of the nucleus of every body cell
    - c. Aids in acid-base maintenance
    - d. Aids in metabolism of fats and carbohydrates
    - e. Aids in activity of some enzymes
11. Any four of the following
    - a. Milk and milk products
    - b. Egg yolk
    - c. Whole grains
    - d. Meat, fish, and poultry
    - e. Legumes
    - f. Nuts
12.
    - a. Forms hemoglobin
    - b. Any three of the following
        - 1) Organ meats, especially liver
        - 2) Lean red meat
        - 3) Legumes
        - 4) Green leafy vegetables, potatoes, and tomatoes
        - 5) Whole-grain and enriched cereals
        - 6) Egg yolks
        - 7) Peaches, apricots, prunes, and raisins
13. Any three of the following
    - a. Insufficient hydrochloric acid in stomach and duodenum
    - b. Excessive use of soda or alkaline medications
    - c. Decreased absorption due to diarrhea
    - d. Deficiency of copper
    - e. Deficiency of ascorbic acid

14. a. Formation of thyroid hormone which regulates rate of metabolism

    b. Sources

        1) Iodized salt

        2) Ocean fish and shellfish

15. a. Regulation of any three of the following

        1) Acid-base balance

        2) Cell permeability

        3) Nerve irritability

        4) Water balance

        5) Osmotic pressure

    b. Any three of the following

        1) Table salt

        2) Baking powder and baking soda

        3) Dairy products

        4) Meat

        5) Whole grains

        6) Fruits such as oranges, bananas, and apricots

16. Any five of the following

    a. Fluorine

    b. Copper

    c. Manganese

    d. Zinc

    e. Cobalt

    f. Sulfur

    g. Magnesium

17. Discussion should include:

    a. Have no caloric value

    b. Regulate metabolism and are essential to life

    c. Vitamins A and D are the only ones stored in the body

    d. Both water-soluble vitamins and minerals can be lost through cooking

    e. Well-balanced diet including the basic four food groups provides sufficient vitamins and minerals for the majority of people

    f. Vitamins and minerals will not relieve a physical illness unless the condition was specifically caused by a lack of that particular vitamin or mineral

WATER AND CELLULOSE
UNIT XXVI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list functions and sources of water and cellulose and ways water is excreted. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with water and cellulose to the correct definition.
2. List five functions of water in the body.
3. List three sources of water in the diet.
4. List four ways the body excretes water normally.
5. List six ways the body loses water abnormally.
6. State the amount of water needed daily.
7. State two functions of cellulose.
8. List three sources of cellulose.
9. Discuss the amount of cellulose required.

WATER AND CELLULOSE
UNIT XXVI

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information sheet.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Test

  D. Answers to test

II. References:

  A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

  B. Howe, Phyllis S. *Basic Nutrition in Health and Disease.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

  C. Mowry, Lillian and Sue R. Williams. *Basic Nutrition and Diet Therapy for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1969.

D. Townsend, Carolynn E. *Nutrition and Diet Modifications for the Nurse.* Albany, New York: Delmar Publishers, 1972.

E. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

WATER AND CELLULOSE
UNIT XXVI

INFORMATION SHEET

I. Terms and definitions

  A. Empty calories--Found in foods which contribute little or nothing except calories

  B. Viscera--Internal organs, especially abdominal

  C. Edema--Presence of abnormally large amount of fluid in the intercellular tissues

  D. Roughage--Indigestible materials such as seeds, fibers, and cellulose

  E. Cellulose--Undigestible, fibrous material found in plants

II. Functions of water

  A. Regulation of body temperature

  B. Removal of waste products through intestines, kidneys, skin, and lungs

  C. Essential constituent of all tissues and fluids

  D. Transportation of nutrients from the digestive tract into the bloodstream and from one cell to another

  E. Lubrication of joints and moistening of viscera for easier movement

  F. Aids digestion by softening, diluting, and liquifying foods

III. Sources of water in the diet

  A. Water contained in solid foods

  B. Ingested fluids such as water, soups, and beverages

  C. Formed by metabolism of foods

IV. Normal excretion of water

  A. Through the kidneys in urine

  B. Through the gastrointestinal tract in feces

INFORMATION SHEET

- C. Through the skin in perspiration
- D. Through the lungs as expired vapor

V. Abnormal loss of water

- A. Vomiting
- B. Diarrhea
- C. Hemorrhage
- D. Excessive perspiration
- E. Extensive burns
- F. Uncontrolled diabetes mellitus
- G. Fever
- H. Open or draining wounds

VI. Daily requirement

- A. Six to eight glasses of water daily for average adult
- B. More is required
    1. When temperature is elevated
    2. During and after excessive loss
    3. In warm weather
    4. In toxic conditions
    5. By infants in proportion to their weight

    (NOTE: The average adult should consume a volume of water equivalent to 3/4 ounce per pound of body weight; an infant should have approximately 2 1/4 ounces per pound of body weight.)

VII. Function of cellulose

- A. Absorbs water to provide bulk
- B. Stimulates peristalsis

VIII. Sources of cellulose

- A. Vegetables
- B. Fruits

INFORMATION SHEET

C. Whole grain products

(NOTE: Refined cereals and sugars have nearly all the fiber removed and are completely or almost completely digestible.)

IX. Requirement of cellulose

A. Five to seven grams recommended daily

B. Each serving of vegetables, except potatoes, provides approximately one gram of cellulose

C. Basic four food groups provide required amount, especially if some whole grain foods are included

WATER AND CELLULOSE
UNIT XXVI

TEST

1. Match terms on the right to the correct definition.

   _____a. Indigestible materials such as seeds, fibers, and cellulose

   _____b. Internal organs, especially abdominal

   _____c. Found in foods which contribute little or nothing except calories

   _____d. Presence of abnormally large amount of fluid in the intercellular tissues

   _____e. Undigestible, fibrous material found in plants

   1. Edema
   2. Roughage
   3. Cellulose
   4. Empty calories
   5. Viscera

2. List five functions of water in the body.

   a.

   b.

   c.

   d.

   e.

3. List three sources of water in the diet.

   a.

   b.

   c.

4. List four ways the body excretes water normally.

   a.

   b.

   c.

   d.

5. List six ways the body loses water abnormally.

   a.

   b.

   c.

   d.

   e.

   f.

6. State the amount of water needed daily by the average adult.

7. State two functions of cellulose.

   a.

   b.

8. List three sources of cellulose.

   a.

   b.

   c.

9. Discuss the amount of cellulose required.

WATER AND CELLULOSE
UNIT XXVI

ANSWERS TO TEST

1. a. 2
   b. 5
   c. 4
   d. 1
   e. 3
2. Any five of the following
   a. Regulation of body temperature
   b. Removal of waste products through intestines, kidneys, skin, and lungs
   c. Essential constituent of all tissues and fluids
   d. Transportation of nutrients from the digestive tract into the bloodstream and from one cell to another
   e. Lubrication of joints and moistening of viscera for easier movement
   f. Aids digestion by softening, diluting, and liquifying foods
3. a. Water contained in solid foods
   b. Ingested fluids such as water, soups, and beverages
   c. Formed by metabolism of food
4. a. Through the kidneys in urine
   b. Through the gastrointestinal tract in feces
   c. Through the skin in perspiration
   d. Through the lungs as expired vapor
5. Any six of the following
   a. Vomiting
   b. Diarrhea

c. Hemorrhage

d. Excessive perspiration

e. Extensive burns

f. Uncontrolled diabetes mellitus

g. Fever

h. Open or draining wounds

6. Six to eight glasses

7. a. Absorbs water to provide bulk

   b. Stimulates peristalsis

8. a. Vegetables

   b. Fruits

   c. Whole grain products

9. Discussion should include:

   a. Five to seven grams recommended daily

   b. Each serving of vegetables, except potatoes, provides approximately one gram of cellulose

   c. Basic four food groups provide required amount, especially if some whole grain foods are included

NUTRITION EVALUATION
UNIT XXVII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list some economic considerations in obtaining and caring for food and identify milk types. She should be able to recognize types of food poisoning and vectors of food infection. She should be able to discuss prevention of food infection. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with nutrition evaluation to the correct definition.
2. List ten economic considerations in obtaining and caring for food.
3. Identify types of milk by matching terms to descriptions.
4. Name one fact about selection, preparation, and storage of listed food groups.
5. Name three types of poisoning by foods, giving an example of each.
6. List three illnesses transmitted by animals, food handlers and shoppers, and improper preparation or storage of food.
7. Discuss prevention of food infection and food poisoning.
8. Write menus for one week using the basic four food groups as a guideline.
9. Prepare a meal, evaluating it according to standards set by the instructor.

NUTRITION EVALUATION
UNIT XXVII

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. Assist students in completing assignment sheets.

  F. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Complete assignment sheets.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Assignment sheets

    1. Assignment Sheet #1--Plan a Menu

    2. Assignment Sheet #2--Prepare and Evaluate a Meal

  D. Test

  E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Howe, Phyllis S. *Basic Nutrition in Health and Disease.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

C. Mowry, Lillian and Sue R. Williams. *Basic Nutrition and Diet Therapy for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1969.

D. Townsend, Carolynn E. *Nutrition and Diet Modifications for the Nurse.* Albany, New York: Delmar Publishers, 1972.

E. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

F. Frobisher, Martin, Lucille Sommermeyer, and Robert Fuerst. *Microbiology in Health and Disease.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

III. Films:

A. "The Fat American." Oklahoma State Department of Health.

B. "Meals for Everyone." Oklahoma State Department of Health.

C. "The Rat Problem." Oklahoma State Department of Health.

D. "An Outbreak of Salmonella Infections." Oklahoma State Department of Health.

E. "An Outbreak of Staphylococcus Intoxications." Oklahoma State Department of Health.

NUTRITION EVALUATION
UNIT XXVII

INFORMATION SHEET

I. Terms and definitions

  A. Condiment--Seasoning; ingredient added to enhance the flavor of food

  B. Adulterate--To add an unnecessary ingredient to cheapen or falsify a preparation

  C. Mislabeled--Incorrect or incomplete information on label

  D. Additive--Element added to a natural food usually to improve or preserve

  E. Dehydrated--Pertaining to food with water removed

  F. Enriched--Food improved in nutritive value by adding vitamins and minerals during processing

  G. Restored--Food in which nutrients lost in processing are replaced

  H. Fortified--Adding nutrients above the level of the food in its natural state

II. Economic considerations in obtaining and caring for food

  A. Buy foods which are in season and in good supply

  B. Plan menus in advance

  C. Purchase staples and canned goods when they are on sale

  D. Buy in quantity when possible and if adequate storage is available

  (NOTE: Larger quantities may cost less per unit than small quantities.)

  E. Recognize bargains and good buys

  (NOTE: Foods reduced in price are a bargain only if they are useable in one's situation.)

  F. Know grades and brands of food

  (NOTE: Less advertised products are often as good a quality as well-known brands.)

INFORMATION SHEET

G. Compare labels for weights and ingredients

H. Buy less expensive forms of food

(NOTE: Margarine is cheaper than butter. Pork or beef liver is less expensive than calves' liver and is as nutritious. Less expensive cuts of beef can be tastefully prepared.)

I. Avoid impulse buying

J. Compare nutritive value of snack foods; limit purchase of empty calorie foods

K. Store foods properly to avoid spoilage and loss of nutrients

L. Use perishable foods as soon as possible

M. Use leftover foods

N. If practical, buy day-old bakery goods at reduced prices

III. Types of milk

A. Skim-Fat including vitamin A removed but contains all other nutrients found in whole milk; may have vitamins A and D added

B. Homogenized-Fat particles evenly dispersed so cream does not rise

C. Pasteurized-Heated to specific temperatures to destroy pathogenic bacteria but not affect nutrients

(NOTE: Pasteurization does not sterilize milk.)

D. Evaporated-Sixty percent of water removed by heating above boiling temperature

(NOTE: High temperature used for evaporation caramelizes the lactose giving the typical flavor.)

E. Condensed-Water removed and sugar added so carbohydrate content is about forty percent; compared to whole milk it is high in sugar and low in calcium and milk vitamins

F. Low fat-Only two percent fat; comparable to whole milk in nutrient value but lower in calories

G. Cultured-Prepared with special bacterial cultures to produce desired acidity, body, flavor, and aroma

INFORMATION SHEET

(NOTE: This type of milk includes cultured buttermilk, yogurt, and cultured or acidophilous milk.)

H. Filled--Combination of milk solids and fats or oils other than milk fat

I. Imitation--Resembles milk but contains no milk products

J. Powdered or dry--Whole, low-fat, or nonfat milk with water removed

(NOTE: Nonfat dry milk is the least expensive form of milk on the market. When reconstituted, it has the same food value as the milk from which it was made.)

IV. Selection, storage, and preparation of foods

(NOTE: See chart.)

FOOD	SELECTION	STORAGE	PREPARATION
Milk, Fresh	More palatable	Refrigerate in covered containers Freezing does not alter nutrients	Cook over low heat; avoid boiling or scorching
Powdered	Easy to store, Keeps longer Less expensive	Dry Store in cool, dry place Reconstituted Refrigerate	Add dry when preparing foods to increase nutrients Use same as fresh milk
Evaporated	Easy to store; Sanitary Keeps well	Refrigerate after opening	Use as directed, may substitute for fresh milk
Cheese	Wide variety to choose from Good source of protein, calcium and phosphorus Meat substitute	Refrigerate well wrapped or in covered container Storage life-5 to 7 days for soft cheeses, longer for hard cheeses Freezing alters texture of some cheeses	Cook at low temperature for short time More flavorful if served at room temperature
Eggs	Purchase only refrigerated eggs Label shows grade Use Grade A when appearance is important; Grade B may be used for baking and cooking Cracked shells allow bacteria to enter eggs	Refrigerate in covered containers For best flavor use within one week Washing before storing removes protective coating	Yolks and whites separate more easily at room temperature Cook at low temperatures to prevent discoloration, curdling, or toughness Overcooking toughens, shrinks protein
Cereals and Breads	Whole grain products have more nutrients than refined products Sugared cereals are less economical	Store in cool, dry place Bread retains freshness best at room tempcrature but molds faster Bread freezes well	Use cereals according to package directions Overcooking cereals reduces vitamin content
Meat, Fish, and Poultry	Less expensive cuts are as nutritious as the more expensive Method of preparation, cost and use determine selection	Store fresh meat in refrigerator in loosely covered container Store cooked meat in tightly covered containers May be frozen for longer storage	Less expensive cuts require longer cooking at lower temperatures Frozen meats may be cooked without thawing Wash poultry before cooking Cook fish at medium temperature; do not overcook
Fruits and Vegetables	Buy in season for lowest prices Avoid bruising Grade of canned fruits and vegetables does not indicate nutritive value	Fruits and tomatoes ripen better at room temperature Ripe fruits except bananas and vegetables should be refrigerated; store frozen packages at 0° F Storage life varies; fresh produce should be used as soon as possible	Cook only until tender using as little water as possible Preserve color of peeled fruits by putting them in weak salt or acid solution Cooking liquids contain dissolved nutrients and and should be used Avoid overcooking Home-canned vegetables should be boiled for 20 minutes

INFORMATION SHEET

V. Common types of poisoning by foods

   A. Chemical poisons in foods

      1. Poisonous mushrooms

      2. Rhubarb leaves

      3. Green part of white potatoes

   B. Chemicals added to foods

      1. Insecticides used to spray growing fruits or vegetables

      2. Sprays and insecticides used in and around the home

      3. Silver polishes which contain cyanide

   C. Disease-producing organisms in foods

      1. Products from diseased animals

      2. Foods contaminated by food handlers

      3. Foods improperly cooked or stored

VI. Some illnesses transmitted through foods

   A. By animals

      1. Tuberculosis—Infected cattle

      2. Dysentery—Contaminated milk

      3. Scarlet fever—Unpasteurized milk

      4. Streptococcal throat infection—Unpasteurized milk

      5. Tularemia—Wild rabbits

      6. Brucellosis—Flesh and meal of cattle, swine, or other animals

      7. Worm infestations—Tapeworm from cattle, trichinosis from pork

      8. Salmonella infections—Pork, poultry and eggs, and foods contaminated by rats and mice

INFORMATION SHEET

   9. Infectious hepatitis-Contaminated food, water, and seafood
   10. Typhoid fever-Contaminated food, water, and seafood

B. By food handlers and shoppers

   1. Common colds
   2. Influenza
   3. Scarlet fever
   4. Diphtheria
   5. Tuberculosis
   6. Staphylococci infections
   7. Intestinal pathogens
   8. Infectious hepatitis
   9. Typhoid

C. Through improper preparation or storage of food

   1. Staphylococcal food poisoning from precooked hams, milk, custards, cream fillings, and salads which have not been refrigerated properly
   2. Streptococcal infections from meat and poultry dressing improperly cooked
   3. Clostridium perfringens, one of the most common causes of food poisoning, from vegetables improperly cleaned or canned
   4. Botulism from improperly canned vegetables

VII. Prevention of food infection and food poisoning

A. Proper cooking of foods

B. Efficient and prompt refrigeration

C. Cleanliness in preparing foods

D. Maintaining frozen foods at ideal temperature

E. Proper dishwashing and handwashing

F. Proper handling of prepared foods

G. Proper handling of dishes and utensils

NUTRITION EVALUATION
UNIT XXVII

ASSIGNMENT SHEET #1 PLAN A MENU

Write menus for one week using the basic four food groups as guidelines.

NUTRITION EVALUATION
UNIT XXVII

ASSIGNMENT SHEET #2 PREPARE AND EVALUATE A MEAL

Prepare in your home at least one of the meals on the menu from Assignment Sheet #1. Write an evaluation of it, discussing the nutritive content, flavor, aroma, color, texture, appearance, and satiety value or other standards as directed by the instructor.

(NOTE: The satiety value of food is its capacity to contribute to the feeling of satisfaction, the sense of comfort, and the retardation of hunger.)

NUTRITION EVALUATION
UNIT XXVII

TEST

1. Match terms on the right to the correct definition.

______a. Seasoning; ingredient added to enhance the flavor of food

______b. To add an unnecessary ingredient to cheapen or falsify a preparation

______c. Incorrect or incomplete information on label

______d. Element added to a natural food usually to improve or preserve

______e. Pertaining to food with water removed

______f. Food improved in nutritive value by adding vitamins and minerals during processing

______g. Food in which nutrients lost in processing are replaced

______h. Adding nutrients above the level of the food in its natural state

1. Fortified
2. Dehydrated
3. Mislabeled
4. Condiment
5. Enriched
6. Additive
7. Restored
8. Adulterate

2. List ten economic considerations in obtaining and caring for food.

a.

b.

c.

d.

e.

f.

g.

h.

i.

j.

3. Identify types of milk by matching the terms on the right to the correct description.

______a. Only two percent fat; comparable to whole milk in nutrient value but lower in calories

______b. Combination of milk solids and fats or oils other than milk fat

______c. Resembles milk but contains no milk products

______d. Water removed and sugar added so carbohydrate content is about forty percent; compared to whole milk it is high in sugar and low in calcium and milk vitamins

______e. Sixty percent of water removed by heating above boiling temperature

______f. Heated to specific temperatures to destroy pathogenic bacteria but not affect nutrients

______g. Fat including vitamin A removed but contains all other nutrients found in whole milk; may have vitamins A and D added

______h. Fat particles evenly dispersed so cream does not rise

______i. Prepared with special bacterial cultures to produce desired acidity, body, flavor, and aroma

______j. Whole, low-fat, or nonfat milk with water removed

1. Homogenized
2. Evaporated
3. Low fat
4. Cultured
5. Pasteurized
6. Filled
7. Condensed
8. Skim
9. Imitation
10. Powdered or dry

4. Name one fact about selection, preparation, and storage for each of the listed food groups on the following chart.

FOOD	SELECTION	STORAGE	PREPARATION
Milk			
Cheese			
Eggs			
Cereals and Breads			
Meat, Fish, and Poultry			
Fruits and Vegetables			

5. Name three types of poisoning by foods, giving an example of each.

   a.

   b.

   c.

6. List three illnesses transmitted

   a. By animals

      1)

      2)

      3)

   b By food handlers and shoppers

      1)

      2)

      3)

   c. Through improper preparation or storage of food

      1)

      2)

      3)

7. Discuss prevention of food infection and food poisoning.

8. Write menus for one week using the basic four food groups as a guideline.

9. Prepare a meal, evaluating it according to standards set by the instructor.

   (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

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NUTRITION EVALUATION
UNIT XXVII

ANSWERS TO TEST

1. a. 4
   b. 8
   c. 3
   d. 6
   e. 2
   f. 5
   g. 7
   h. 1

2. Any ten of the following

   a. Buy foods which are in season and in good supply
   b. Plan menus in advance
   c. Purchase staples and canned goods when they are on sale
   d. Buy in quantity when possible and if adequate storage is available
   e. Recognize bargains and good buys
   f. Know grades and brands of foods
   g. Compare labels for weights and ingredients
   h. Buy less expensive forms of food
   i. Avoid impulse buying
   j. Compare nutritive value of snack foods; limit purchase of empty calorie foods
   k. Store foods properly to avoid spoilage and loss of nutrients
   l. Use perishable foods as soon as possible
   m. Use leftover foods
   n. If practical, buy day-old bakery goods at reduced prices

3. a. 3
   b. 6
   c. 9
   d. 7
   e. 2
   f. 5
   g. 8
   h. 1
   i. 4
   j. 10

4. Answer should include any one fact from each column for each listed food group.

FOOD	SELECTION	STORAGE	PREPARATION
Milk, Fresh	More palatable	Refrigerate in covered containers Freezing does not alter nutrients	Cook over low heat: avoid boiling or scorching
Powdered	Easy to store; Keeps longer Less expensive	Dry Store in cool, dry place Reconstituted Refrigerate	Add dry when preparing foods to increase nutrients Use same as fresh milk
Evaporated	Easy to store; Sanitary Keeps well	Refrigerate after opening	Use as directed; may substitute for fresh milk
Cheese	Wide variety to choose from Good source of protein, calcium, and phosphorus Meat substitute	Refrigerate well wrapped or in covered container Storage life 5 to 7 days for soft cheeses, longer for hard cheeses Freezing alters texture of some cheeses	Cook at low temperature for short time More flavorful if served at room temperature
Eggs	Purchase only refrigerated eggs Label shows grade Use Grade A when appearance is important; Grade B may be used for baking and cooking Cracked shells allow bacteria to enter eggs	Refrigerate in covered containers For best flavor use within one week Washing before storing removes protective coating	Yolks and whites separate more easily at room temperature Cook at low temperatures to prevent discoloration, curdling, or toughness Overcooking toughens, shrinks protein
Cereals and Breads	Whole grain products have more nutrients than refined products Sugared cereals are less economical	Store in cool, dry place Bread retains freshness best at room temperature but molds faster Bread freezes well	Use cereals according to package directions Overcooking cereals reduces vitamin content
Meat, Fish, and Poultry	Less expensive cuts are as nutritious as the more expensive Method of preparation, cost, and use determine selection	Store fresh meat in refrigerator in loosely covered container Store cooked meat in tightly covered containers May be frozen for longer storage	Less expensive cuts require longer cooking at lower temperatures Frozen meats may be cooked without thawing Wash poultry before cooking Cook fish at medium temperature; do not overcook
Fruits and Vegetables	Buy in season for lowest prices Avoid bruising Grade of canned fruits and vegetables does not indicate nutritive value	Fruits and tomatoes ripen better at room temperature Ripe fruits except bananas and vegetables should be refrigerated; store frozen packages at 0° F. Storage life varies; fresh produce should be used as soon as possible	Cook only until tender using as little water as possible Preserve color of peeled fruits by putting them in weak salt or acid solution Cooking liquids contain dissolved nutrients and and should be used Avoid overcooking Home-canned vegetables should be boiled for 20 minutes.

5. a. Chemical poisons in foods--One of the following: poisonous mushrooms, rhubarb leaves, or green part of white potatoes

   b. Chemicals added to foods--One of the following: insecticides used to spray growing fruits or vegetables, sprays and insecticides used in and around the home, or silver polishes which contain cyanide

   c. Disease-producing organisms in foods--One of the following: products from diseased animals, foods contaminated by food handlers, or foods improperly cooked or stored

6. Answer should include any three from each of the three groups.

   a. By animals

      1) Tuberculosis--Infected cattle

      2) Dysentery--Contaminated milk

      3) Scarlet fever--Unpasteurized milk

      4) Streptococcal throat infection--Unpasteurized milk

      5) Tularemia--Wild rabbits

      6) Brucellosis--Flesh and meat of cattle, swine, or other animals

      7) Worm infestations--Tapeworm from cattle, trichinosis from pork

      8) Salmonella infections--Pork, poultry and eggs, and foods contaminated by rats and mice

      9) Infectious hepatitis--Contaminated food, water, and seafood

      10) Typhoid fever--Contaminated food, water, and seafood

   b. By food handlers and shoppers

      1) Common colds

      2) Influenza

      3) Scarlet fever

      4) Diphtheria

      5) Tuberculosis

      6) Staphylococci infections

      7) Intestinal pathogens

        - 8) Infectious hepatitis
        - 9) Typhoid
    - c. Through improper preparation or storage of food
        - 1) Staphylococcal food poisoning from precooked hams, milk, custards, cream fillings, and salads which have not been refrigerated properly
        - 2) Streptococcal infections from meat and poultry dressing improperly cooked
        - 3) Clostridium perfringens, one of the most common causes of food poisoning, from vegetables improperly cleaned or canned
        - 4) Botulism from improperly canned vegetables

7. Discussion should include:
    - a. Proper cooking of foods
    - b. Efficient and prompt refrigeration
    - c. Cleanliness in preparing foods
    - d. Maintaining frozen foods at ideal temperature
    - e. Proper dishwashing and handwashing
    - f. Proper handling of prepared foods
    - g. Proper handling of dishes and utensils
8. Evaluated to the satisfaction of the instructor.
9. Evaluated to the satisfaction of the instructor.

DIET MODIFICATIONS
UNIT XXVIII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss the nurse's responsibility in diet therapy and describe hospital diets. She should be able to list purposes of therapeutic diets and the foods included in them. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Define diet therapy.
2. Discuss nursing responsibilities in diet therapy.
3. Describe the five standard diets.
4. List four purposes of a therapeutic diet.
5. Describe briefly six diet modifications as specified by the instructor.
6. Write menus for one day making modifications for diets listed.

DIET MODIFICATIONS
UNIT XXVIII

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Assist students in completing assignment sheet.

   F. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Complete assignment sheet.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Assignment Sheet #1-Modify Menus

   D. Test

   E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Howe, Phyllis S. *Basic Nutrition in Health and Disease.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

C. Mowry, Lillian and Sue R. Williams. *Basic Nutrition and Diet Therapy for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1969.

D. Townsend, Carolynn E. *Nutrition and Diet Modifications for the Nurse.* Albany, New York: Delmar Publishers, 1972.

E. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Additional materials:

A. Film--"More than Food." Oklahoma State Department of Health.

B. Filmstrip--"Feeding the Patient." Trainex Corporation.

DIET MODIFICATIONS
UNIT XXVIII

INFORMATION SHEET

I. Diet therapy--Modifications of the normal diet to cover requirements created by health deviations

II. Nursing responsibilities in diet therapy

   A. Prepare patient for mealtime

   B. Be sure each patient receives a tray UNLESS food is being withheld

   C. Check to see that each patient gets the CORRECT tray

   D. Make tray as attractive as possible; check to see that tray is complete

   E. Serve and remove tray promptly

   F. Adjust diet as much as possible to patient's likes and dislikes

   G. Encourage patient to eat

   H. Teach patient the value of his diet

III. Standard diets

   A. Clear or surgical liquid

      1. Used after surgery or to replace fluids lost by vomiting or diarrhea

      2. Composed mainly of water and carbohydrates; nutritionally inadequate

      3. Foods as permitted by the physician--May include tea or black coffee, fat-free broth, strained vegetable or fruit juices, gelatin, carbonated beverages

   B. Full or medical liquid

      1. Used during acute infections, for patients having difficulty chewing or swallowing, and for those with gastrointestinal disturbances

      2. May be used for an indefinite period if physical activity is limited; may be deficient in iron

INFORMATION SHEET

3. Foods allowed--All liquids including strained cream soups, milk, strained cereals, plain puddings, and plain ice cream and sherbet

C. Soft

1. Usually given between liquid and full diets for patients who need easily chewed foods

2. Can be planned to be nutritionally adequate

3. Foods allowed--All except fried foods, nuts, whole-grain cereals or breads, fibrous vegetables, pastries, pickles, and tough meats

D. Light or convalescent

(NOTE: Many health care facilities omit soft or light diet classification because they are similar.)

1. Usually given to preoperative and postoperative patients and those with minor illnesses

2. Nutritionally adequate

3. Foods allowed--All except fried foods, pastries, fibrous vegetables, and nuts

E. Full

(NOTE: This may be called general, regular, normal, or house diet.)

1. Most frequently used diet and given to all patients whose condition does not require a special diet

2. Normal diet based on basic four food groups

3. Includes all foods

(NOTE: Some health care facilities restrict the amount of pastries, fried foods, strongly flavored vegetables, and highly seasoned foods.)

IV. Purposes of a therapeutic diet

A. Regulation of the amount of specific foods in metabolic disorders

B. Increase or decrease of body weight by adding or limiting calories

INFORMATION SHEET

C. Prevention or restriction of edema by restricting sodium intake

D. Aiding digestion by avoiding foods that irritate the digestive tract

E. Assisting an organ to regain and/or maintain its normal function

V. Therapeutic or modified diets, foods allowed and omitted, and conditions for which they may be prescribed

(NOTE: See charts.)

INFORMATION SHEET

DIET	FOODS ALLOWED	FOODS OMITTED	CONDITIONS
Low Carbohydrate	Only enough carbohydrate to maintain health and carry on activities Dietetic foods	Sugar and sugar-sweetened foods All jellies and candies Pastries and desserts Alcoholic beverages	Diabetes mellitus Hyperinsulinism (Nutritionally adequate)
Low Fat	Increased carbohydrates and proteins Skim milk Sherbet Minimum amount butter Vegetables and fruits as desired	All fats limited Fried foods Pork Ice cream, pastries	Gall bladder and liver disease Obesity Heart conditions (Deficient in fat-soluble vitamins)
High Iron	Normal diet with high-iron foods Liver and organ meats Red meats All dried fruits Soybeans Molasses		Nutritional anemia Pernicious anema (Nutritionally adequate)
Low Cholesterol	Lean muscle meats, fish Poultry (without skin or fat) Skim milk Margarine made of unsaturated fats Liquid vegetable oil	Organ meats Egg yolk Shellfish Desserts made with cream, whole milk Cream, butter	Atherosclerosis Coronary circulation diseases (Nutritionally adequate)

DIET	FOODS ALLOWED	FOODS OMITTED	CONDITIONS
High Calorie (4000 calories)	Emphasis on increase of calories rather than increase of nutrients Full meals with high calorie between-meal snacks	Fatty foods and bulky foods Foods patient dislikes	For persons ten percent or more below desired weight for age, height, and sex (Diet adequate in all nutrients)
High Protein (up to 100 grams)	Added amounts of meat, milk, cheese, eggs, fish and poultry Additional nonfat dry milk to increase protein without increasing fat	Fatty foods	Children and adolescents who need additional protein for growth Pregnancy and lactation Following surgery Illnesses resulting in protein loss (Nutritionally adequate)
Low Protein (approximately 40 grams)	One ounce daily–meat, poultry, fish, or cheese One egg daily One cup milk daily Butter as desired Fruits and vegetables as desired	Meat over one ounce Puddings unless made with milk allowance Cream soups unless prepared with milk allowance Except dried peas and beans	Kidney conditions Liver ailments Heart conditions (Nutritionally inadequate in protein, calcium, iron, and all vitamins except vitamin C)
High Carbohydrate	Emphasis on carbohydrate foods Full meals with high carbohydrate snacks	Fried foods Fatty meats Pastries Alcoholic beverages Spices and condiments	Preparation for surgery Kidney disease Toxemia of pregnancy Liver disease (Nutritionally adequate)

INFORMATION SHEET

DIET	FOODS ALLOWED	FOODS OMITTED	CONDITIONS
High Residue	Increased whole grain cereals Increased fruits, vegetables		Atonic constipation Nutritionally adequate
Bland	Generous amounts of milk and protein foods Refined cereals Simple desserts Ripe banana, applesauce, baked apple, peaches, pears Decaffeinated coffee, weak tea Carrots, beets, string beans, spinach, squash without seeds, asparagus tips, peas	Fried foods Meats with coarse fiber, tough gristle Coarse foods Highly seasoned foods Fruits and vegetables other than allowed Pastries and candies Alcoholic beverages	Gastric ulcer Spastic constipation Colitis (Nutritionally adequate if well planned)
Low Residue	Refined cereals, breads Soft cheese (cottage, cream) Tender meats Pureed vegetables Applesauce, canned peaches, pears white cherries, pureed apricots, prunes, plums, fruit juices Plain pudding, angel cake, sponge cake	Fibrous meats Fresh fruits and vegetables Fried foods Whole grain cereals, breads Spices and condiments Pastries and candies Alcoholic beverages	Before and after intestinal surgery Severe diarrhea Colitis, diverticulitis Hemorrhoid (Deficient in vitamins)
Sodium Restricted	Natural foods prepared without salt Milk, meat in limited amounts Fruits and vegetables without salt Unsalted bread Desserts prepared without salt	Processed foods Salt, many seasonings Monosodium glutamate Baking powder, baking soda Brine prepared foods Food preservatives containing sodium Cultured buttermilk	Kidney diseases Cardiovascular disorders Hypertension (Nutritionally adequate if well planned)

DIET MODIFICATIONS
UNIT XXVIII

ASSIGNMENT SHEET #1--MODIFY MENUS

1. Write menus for one day using the basic four food groups.

   (NOTE: If menus were written for Unit XXVII Nutrition Evaluation, a menu for one of those days may be used to complete this assignment.)

2. Make necessary modifications to meet restrictions for the following diets.

   a. Bland
   b. Low fat
   c. High iron
   d. Low cholesterol
   e. High carbohydrate
   f. High protein
   g. Low sodium

(NOTE: The following books may be used as references in modifying the menus.)

a. Howe, Phyllis S. *Basic Nutrition in Health and Disease*. Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

b. Mowry, Lillian and Sue R. Williams. *Basic Nutrition and Diet Therapy for Nurses*. St. Louis, Missouri: The C. V. Mosby Company, 1969.

c. Townsend, Carolynn E. *Nutrition and Diet Modifications for the Nurse*. Albany, New York: Delmar Publishers, 1972.

DIET MODIFICATIONS
UNIT XXVIII

TEST

1. Define diet therapy.
2. Discuss nursing responsibilities in diet therapy.

3. Describe the five standard diets.

   a.

   b.

   c.

   d.

   e.

4. List four purposes of a therapeutic diet.

   a.

   b.

   c.

   d.

5. Describe briefly six diet modifications as specified by the instructor.

   a.

   b.

   c.

d.

e.

f.

6. Write menus for one day making modifications for diets listed.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

DIET MODIFICATIONS
UNIT XXVIII

ANSWERS TO TEST

1. Modifications of the normal diet to cover requirements created by health deviations

2. Discussion should include:

   a. Prepare patient for mealtime

   b. Be sure each patient receives a tray unless food is being withheld

   c. Check to see that each patient gets the correct tray

   d. Make tray as attractive as possible; check to see that tray is complete

   e. Serve and remove tray promptly

   f. Adjust diet as much as possible to patient's likes and dislikes

   g. Encourage patient to eat

   h. Teach patient the value of his diet

3. Description should include:

   a. Clear or surgical liquid

      1) Used after surgery or to replace fluids lost by vomiting or diarrhea

      2) Composed mainly of water and carbohydrates; nutritionally inadequate

      3) Foods as permitted by physician--May include tea or black coffee, fat-free broth, strained vegetable or fruit juices, gelatin, carbonated beverages

   b. Full or medical liquid

      1) Used during acute infections, for patients having difficulty chewing or swallowing, and for those with gastrointestinal disturbances

      2) May be used for an indefinite period if physical activity is limited; may be deficient in iron

3) Foods allowed–All liquids including strained cream soups, milk, strained cereals, plain puddings, and plain ice cream and sherbet

c. Soft

1) Usually given between liquid and full diets for patients who need easily chewed foods

2) Can be planned to be nutritionally adequate

3) Foods allowed–All except fried foods, nuts, whole-grain cereals or breads, fibrous vegetables, pastries, pickles, and tough meats

d. Light or convalescent

1) Usually given to preoperative and postoperative patients and those with minor illnesses

2) Nutritionally adequate

3) Foods allowed–All except fried foods, pastries, fibrous vegetables, and nuts

e. Full

1) Most frequently used diet and given to all patients whose condition does not require a special diet

2) Normal diet based on basic four food groups

3) Includes all foods

4. Any four of the following

a. Regulation of the amount of specific foods in metabolic disorders

b. Increase or decrease of body weight by adding or limiting calories

c. Prevention or restriction of edema by restricting sodium intake

d. Aiding digestion by avoiding foods that irritate the digestive tract

e. Assisting an organ to regain and/or maintain its normal function

5. Evaluated to the satisfaction of the instructor.

6. Evaluated to the satisfaction of the instructor.